Infrastructure Management & Monitoring
For *Business-Critical Continuity™*

Liebert® RDU-S™ Rack Management Device

User Manual

EMERSON
Network Power

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1.0 INTRODUCTION

This section provides an overview of the Liebert® RDU-S™, including the ports, indicators, technical specifications and options.

1.1 Description

The Liebert RDU-S is a compact rack processing unit designed to monitor the environment in electronic equipment racks and rooms through various types of sensors and cameras. The unit can accommodate multiple sensors, such as smoke and motion detectors and Liebert SN™ temperature and humidity sensors. It can also be used for remote notification such as activating a beacon light to report problems.

The compact design makes it suitable for installation in a rack, where it takes up little space, or it may be mounted on a wall for access without opening the equipment rack.

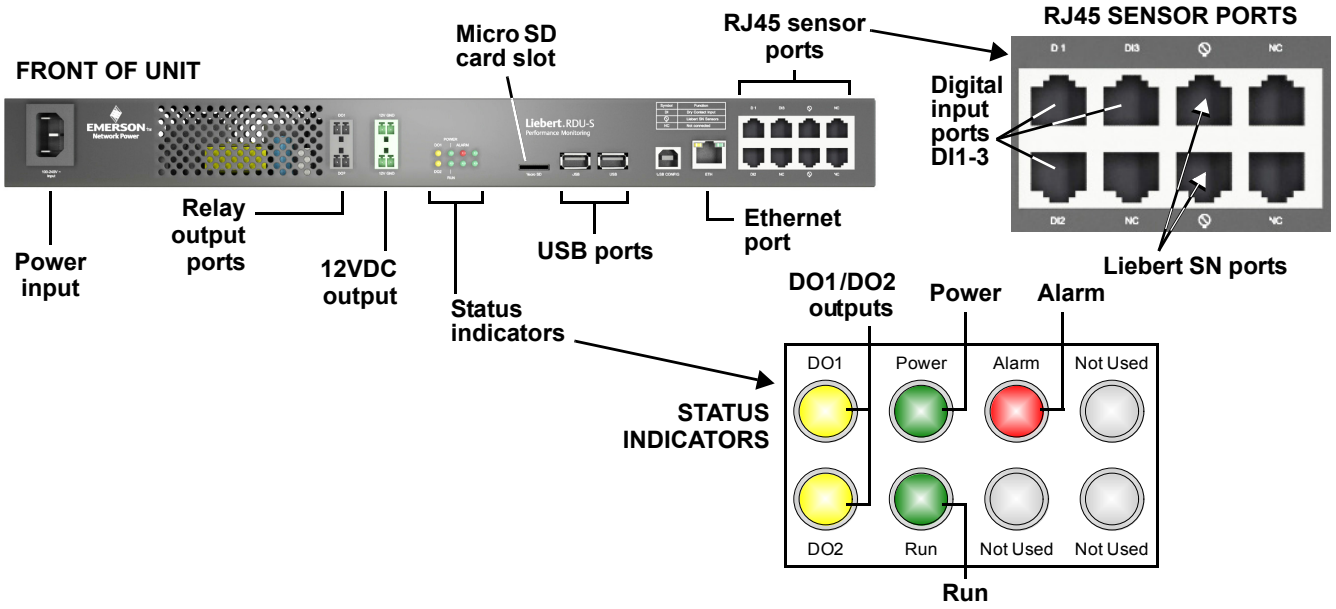
The unit is shown in **Figure 1**.

Figure 1 Liebert RDU-S

1.2 Ports and Indicators

Figure 2 shows the front panel of the Liebert RDU-S™ with the location of ports (**Table 1**) and status indicators (**Table 2**).

Figure 2 Ports and indicators on front of unit



1.2.1 Ports

The ports and their functions are listed in **Table 1**.

Table 1 Port descriptions

Port	#	Label	Function
Power Input	1	100-240V~Input	Input power to the unit: 100-200VAC, 50 and 60Hz
Relay Output Ports	2	DO1, DO2	Connect to output relays 1 and 2—e.g., beacon light
12VDC Output	2	12V GND	Power to external sensor (12VDC power)—e.g., beacon light
Micro SD Card Slot	1	Micro SD	Expand storage capacity with 8G Micro SD card
USB Ports	2	USB1, USB2	Connect to a USB camera
Ethernet Port, RJ45	1	ETH	Connect to a 10/100 Ethernet port for Web access & SNMP connectivity
RJ45 Sensor Ports*:			
Digital Input Ports	3	DI1, DI2, DI3	Connect digital sensors (one sensor per port)—On/Off, dry contact sensors, such as smoke detectors and motion detectors
Liebert SN Ports	2		Connect Liebert SN sensors to monitor temperature, humidity, dry contact, door sensor and leak detection

* See **Section 3.1** for details on connecting sensors to RJ45 sensor ports (excluding Ethernet port).

1.2.2 Status Indicators

Refer to **Table 2** for details on the unit's status indicators: relay outputs, power, alarm and run.

Table 2 Indicator descriptions

Indicator	Status of:	Color	Status - Indicator On / Flashing		Status - Indicator Off	
DO1, DO2	Relay outputs	Yellow	On	Relay DO1 or DO2 is closed.	Off	Relay DO1 or DO2 is open.
POWER	Input power	Green	On	Input power is present.	Off	Input power is not present.
ALARM	Alarms	Red	On-Solid	Unit has a critical alarm./ Unit is powering up.	Off	No alarms detected.
			Flashing	Unit has a warning alarm.		
RUN	Unit operation	Green	Flashing	Unit is operating normally.	Off	Unit is not running.

1.3 Technical Specifications

1.3.1 Input Specifications

The input specifications of the processing unit are listed in **Table 3**.

Table 3 Input specifications

Input parameters	Corresponding port	Measurement accuracy	Description
Liebert SN sensor input	Liebert SN sensor port	Determined by sensor used	Measures temperature, humidity, dry contact, cabinet door status and leak detection.
Digital signal input	DI1, DI2, DI3 ports	—	Measures the digital signal from connected smoke sensors and motion sensors.

1.3.2 Output Specifications

The output specifications of the processing unit are listed in **Table 4**.

Table 4 Output specifications

Output parameters		Specification	Description
Relay output	Output contact	Relay normally open contact output	Output relays to control external device, such as a beacon light.
	Contact capacity	5A/24VDC	
Sensor power output	12VDC output	11.5VDC to 12.5VDC, maximum output current: 0.8A	The output current is the total current the sensor power can provide. The total power consumption of 12VDC power does not exceed 10W.
USB port output		Maximum output current: 500mA	—

1.3.3 Ambient Specifications

The ambient specifications of the processing unit are listed in **Table 5**.

Table 5 Ambient specifications

Item	Requirement
Application location	Indoor
Working temperature, °F (°C)*	32 to 113 (0 to 45)
Relative humidity	5% - 95%RH (non-condensing)
Storage temperature, °F (°C)	-40 to 158 (-40 to 70)
Cooling	Natural cooling

* Applies to the Liebert® RDU-S™, not any devices connected to it. Check the temperature range for connected devices to prevent damage.

1.3.4 Mechanical Specifications

The mechanical specifications of the processing unit are listed in **Table 6**.

Table 6 Mechanical specifications

Dimensions - W x D x H, in. (mm)	17.3 x 2.2 x 1.7 (440 × 55 × 44.2)
Weight, lb. (kg)	3.3 (1.5)

1.4 Options

The options for the Liebert® RDU-S™ are listed in **Table 7**. Refer to **3.0 - Connecting Sensors and Other Devices** for connection instructions.

Table 7 Options

Type	Description	Part No.	Port
Digital sensors	Smoke sensor	AD-S	Digital RJ45 ports (DI1, DI2, DI3)
	Motion sensor	AD-IM	
Liebert SN Sensor	Integrated cable with single temperature sensor	SN-Z01	Liebert SN sensor ports
	Integrated cable with three temperature sensors	SN-Z02	
	Integrated cable with three temperature sensors and one humidity sensor	SN-Z03	
	Modular with single temperature sensor	SN-T	
	Modular with single temperature sensor and single humidity sensor	SN-TH	
	Modular with three dry contact inputs	SN-3C	
	Modular with two door contact inputs	SN-2D	
	Two door switches with mounting brackets for DCM rack	AD-2D-DCM	SN-2D Sensor
Beacon	LED Strobe Light	AD-RB	Relay output ports (DO1, DO2) and 12VDC output
Cameras	Stationary USB Camera	AD-SUSBC	USB ports (USB1, USB2)
	Tilt and Pan USB Camera	AD-TPUSBC	USB ports (USB1, USB2)
	Camera Memory	AD-MICROSD8	Micro SD Card Slot

2.0 INSTALLATION

This section provides details for the various options of mounting the Liebert® RDU-S™ securely in a rack or on a wall.

WARNING

Ensure that the Liebert RDU-S is Off and that all local and remote input power sources have been disconnected before beginning to install the unit. Never open, alter or move the unit while input power is present.

NOTE

All external circuits must be safety extra-low voltage (SELV) circuits. The insulation and isolation must be enhanced between the SELV circuits and the power grid.

2.1 Installation Considerations

Mount the Liebert RDU-S securely before connecting equipment, typically in a 19" rack or mounted on a wall.

- The Liebert RDU-S must be installed near a power outlet or socket within easy reach using the supplied power cord.
- The unit must be connected to the power outlet or socket with protective earthing terminal.
- The unit must be securely installed in a rack or on a wall BEFORE using or connecting any equipment.

2.2 Choosing a Mounting Method

Select the mounting option that best fits your needs:

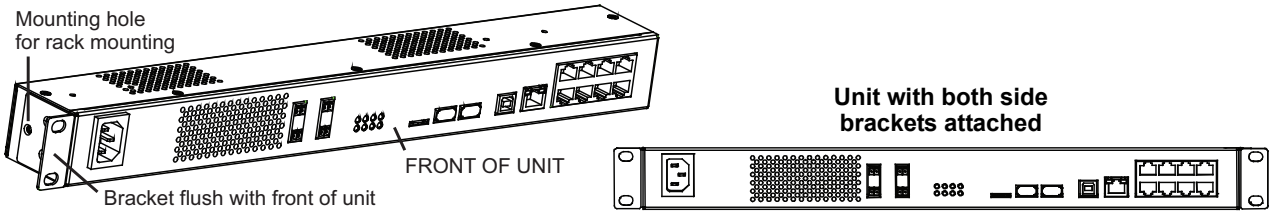
Table 8 Mounting methods

Mounting option	Tools needed	For details, see:
• Horizontal mounting in a rack	Factory-supplied brackets and screws	**2.3 - Horizontal Rack Mounting**
• Vertical mounting in a rack	Optional round hanger (available separately)	**2.4 - Vertical Rack Mounting**
• Mounting on a wall	Factory-supplied brackets and screws	**2.5 - Wall Mounting**

2.3 Horizontal Rack Mounting

For horizontal mounting in a rack, use the factory-supplied brackets and screws (M3 and M6):

1. Place the shorter side of a bracket flush with the front panel and the longer side against one side of the unit, shown below left.
2. Align the rear bracket hole with a mounting hole on the unit, shown below left, and use an M3 screw to fasten the bracket to the side of the unit.

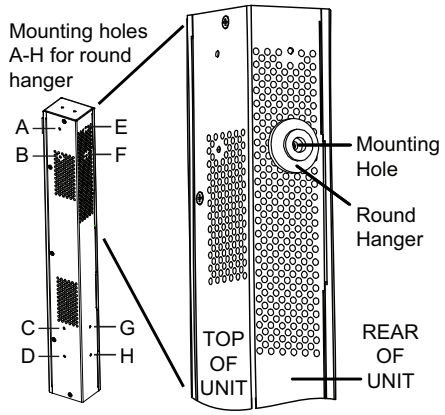


3. Repeat **Steps 1** and **2** for the bracket on the other side. The Liebert RDU-S with both brackets attached is shown above right.
4. Use field-supplied M6 screws to fasten both brackets of the Liebert RDU-S onto the rack's front or rear rails.

2.4 Vertical Rack Mounting

For vertical mounting in a rack, use the optional round hanger (available separately) and a factory-supplied M3 screw:

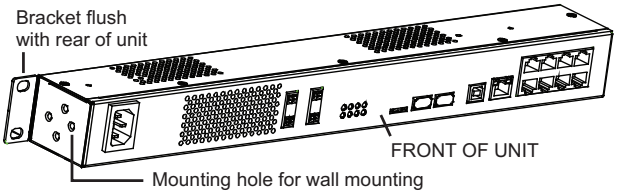
1. Decide which mounting hole to use—there are four vertical mounting holes on top (A-D, shown at right) and four on the rear (E-H).
2. Fasten the round hanger onto the top or back of the unit with an M3 screw. The example at far right shows the hanger fastened to the rear of the unit.
3. Hang the unit in the rack by inserting the round hanger through a mounting slot on a vertical rail.

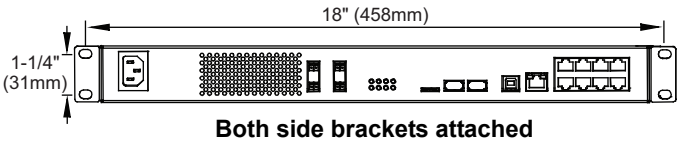


2.5 Wall Mounting

To mount the unit on a wall, use the factory-supplied brackets and screws (M3):

1. Place the shorter side of a bracket flush with the rear panel and the other against one side of the unit.
2. Align the front bracket hole with a mounting hole on the unit, shown below, and use an M3 screw to fasten the bracket to the side of the unit.





Both side brackets attached

3. Repeat **Steps 1** and **2** for the bracket on the other side.
4. Drill four holes in the wall corresponding to the bracket hole dimensions shown above, then insert a wall anchor into each hole.
5. Align the bracket holes with the drilled holes and use screws to attach the unit to the wall.

3.0 CONNECTING SENSORS AND OTHER DEVICES

NOTE
The power and external signals that are connected to the Liebert® RDU-S™ must be SELV circuits. The isolation and insulation must be enhanced between them and the power grid.

This section provides instructions for connecting factory-supplied devices to the Liebert RDU-S for monitoring and management: smoke detector, motion detector, Liebert SN temperature and humidity sensor, beacon light and USB cameras.

NOTE
This section provides guidelines for connecting devices to the Liebert RDU-S. Refer to the corresponding instructions for complete details on installation and specifications.

3.1 Connecting Sensors to RJ45 Sensor Ports

The Liebert RDU-S has two types of sensor ports on the front of the unit: three digital sensor ports and two Liebert SN sensor ports, Follow these guidelines to connect sensors to these ports and refer to the sensor installation instructions.

3.2 Digital Input Ports DI1, DI2, DI3

The three digital input ports DI1, DI2 and DI3, shown at right, may be used to connect digital smoke and motion detectors. You may use any standard straight-through RJ45 Ethernet cable.

The recommended sensors are shown in **Figure 3**.

Figure 3 Recommended digital sensors

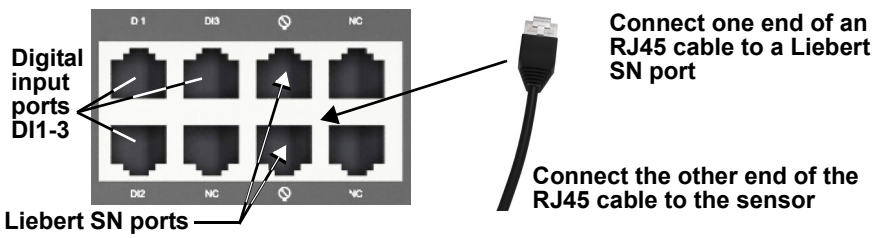
AD-S Smoke Sensor

AD-IM Motion Sensor

To connect the factory-supplied smoke detector or motion detector:

- Insert either end of an RJ45 connector on an RJ45-RJ45 cable into any of the three digital ports—labeled DI1, DI2 and DI3—on the Liebert RDU-S, shown at right.
- Connect the other end of the cable to the RJ45 port on the smoke detector or motion detector.

Figure 4 Liebert SN ports


Digital input ports DI1-3
Liebert SN ports
Connect one end of an RJ45 cable to a Liebert SN port
Connect the other end of the RJ45 cable to the sensor

3.3 Liebert SN Sensor Ports

The two ports labeled with a Liebert SN icon , shown above, are designed for use with Liebert SN sensors. Each sensor is shipped with a cable to connect to one of the Liebert SN ports on the Liebert RDU-S™. You may use this cable or another standard straight-through cable.

The two Liebert SN ports can support:

- Temperature sensors—10
- Humidity sensors—10
- SN-3C sensors—3 (9 digital inputs)
- SN-2D sensors—3 (6 door inputs)
- Leak sensor—1

The maximum combined cable length from the Liebert® RDU-S™ to the last sensor is 65.6 feet (20m).

To connect the sensor:

- Insert either end of an RJ45 connector on the factory-supplied RJ45-RJ45 cable (or user-supplied cable) into the Liebert SN port on the Liebert RDU-S, identified by the icon shown below.

Icon	Description	Purpose
	Liebert SN ports	Use these ports **ONLY** for Liebert SN sensors.

- Connect the other end of the cable to the sensor.

3.4 Connecting a Beacon to the Relay Output Ports

The relay output ports shown in **Figure 5** may be used to connect the beacon light shipped with the Liebert RDU-S. Follow these guidelines and refer to the beacon installation instructions.

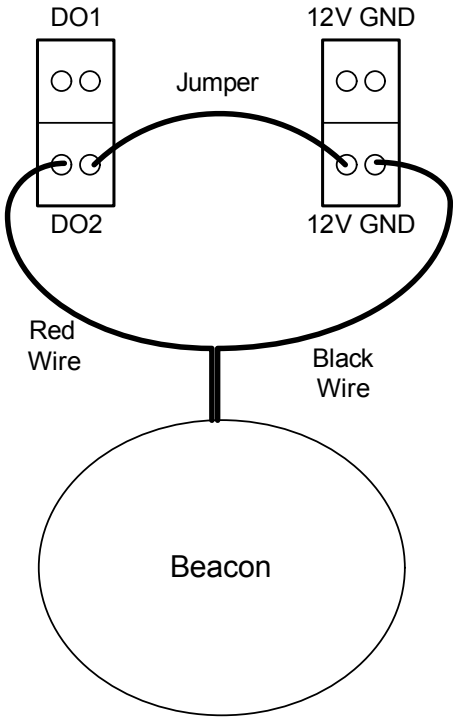
Figure 5 Position of relay output ports

To connect the beacon light:

1. Connect the required cables with either of the relay output ports labeled DO1 and DO2. The relay of the processing unit is normally open passive dry contact.
2. Properly arrange the wiring according to the site conditions.

Refer to **Figure 6**.

Figure 6 Beacon wiring diagram

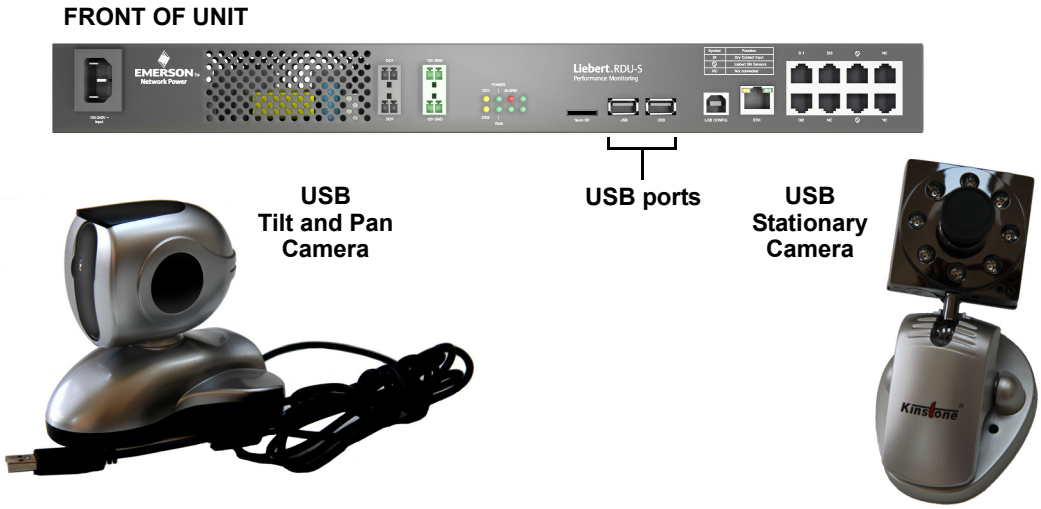


NOTE
Pay attention to the port labels before connection to avoid possibly damaging the device by making the wrong connection.

3.5 Connecting a Stationary or Tilt and Pan Camera to a USB Port

The USB ports shown in **Figure 5** may be used to connect either or both optional cameras. Follow these guidelines and refer to the installation instructions for each camera.

Figure 7 Position of USB ports, cameras



To connect a camera, connect the attached USB cable to one of the USB ports labeled USB1 and USB2.

NOTE
The video camera, as shipped, will relay images and video to a monitoring screen. Recording images or video requires a micro SD card, which is available from the factory, part number AD-MICROSD8.

4.0 PARAMETER SETTING

A Web interface allows you to view monitoring data, configure the unit and connected devices and manage alarms and other data. This interface is accessible by connecting an Ethernet cable from the unit to a computer on a network.

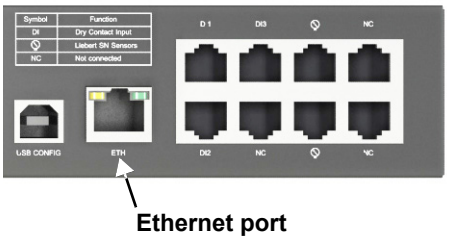
The Liebert® RDU-S™ has a default IP address (192.168.0.10). This section describes how to change the unit's IP address.

4.1 Setting the IP Address

Follow these instructions to set the IP address of the Liebert RDU-S. This step is required for communication with the Liebert RDU-S using the Web interface.

1. Connect a laptop and set its IP address:
   - Insert a standard Ethernet cable (not included) into the Ethernet port on the front panel of the Liebert RDU-S, shown at right.
   - Insert the other end of the cable into a laptop's Ethernet port.
   - If needed, configure the laptop's IP settings to communicate on a 192.168.0.X network, for example:

IP address	192.168.0.9
Subnet mask	255.255.255.0
Default gateway	192.168.0.1

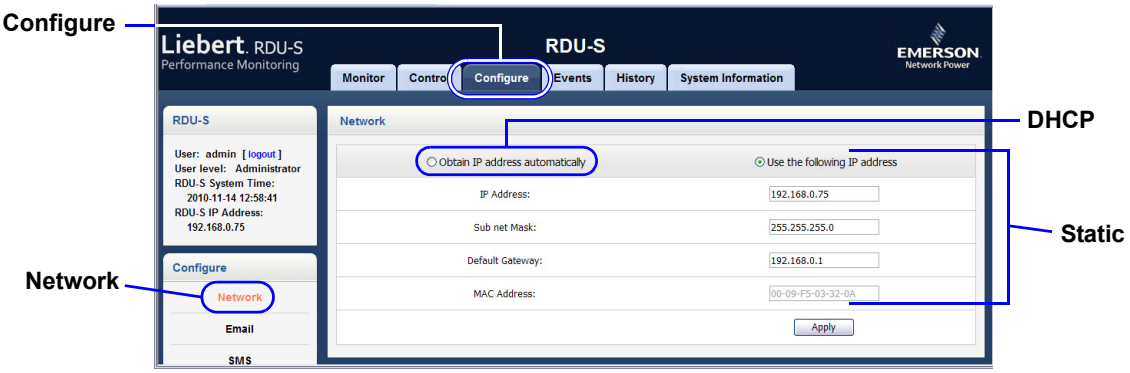


2. Open a browser and go to the login page:
   - Open a Web browser such as Microsoft Windows® Internet Explorer.
   - Enter the IP address of the Liebert RDU-S in the address bar—the default is **http://192.168.0.10**. The login window appears, shown at right.
3. Log in to the Web interface:
   - Select a user name from the drop-down list and enter a password (both case-sensitive), then click the **Login** button:
     - **User Name** (default is *admin*)
     - **Password** (default is *Liebert*)

NOTE

*For security, change the default password (see **8.8 - Change Password**).*

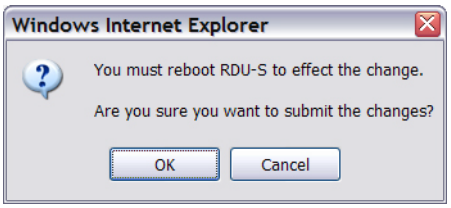
4. Click the **Configure** tab, then click **Network** at left.



5. Determine which method to use for IP address assignment: DHCP (automatic) or Static (fixed address).
   - For DHCP, click the **Obtain IP address automatically** button.
   - To assign a Static IP address, click **Use the following IP address**, then enter the appropriate IP address, subnet mask and gateway address, for example:

IP address	192.168.0.10
Subnet mask	255.255.255.0
Default gateway	192.168.0.1

6. Click **Apply** to save any changes.
7. A confirmation window indicates the unit must be rebooted for the change to take effect. Click **OK**, and the unit will reboot.
8. If needed, reset the laptop's IP settings (as in **Step 1**).
9. Connect the Liebert® RDU-S™ to your network.


Windows Internet Explorer
You must reboot RDU-S to effect the change.
Are you sure you want to submit the changes?
OK
Cancel

5.0 WEB INTERFACE - OVERVIEW

The Liebert® RDU-S™ has a Web interface for monitoring and managing connected devices. This section offers details on logging in and using monitoring, configuration and control functions of the Web interface.

NOTE
Java V1.6 or above is required for proper operation. Check to make sure you have the latest Java update.

5.1 Log In

To log in to the Web interface:

1. Open a Web browser such as Internet Explorer.
2. In the browser address bar, enter the IP address assigned to the Liebert RDU-S, then press the Enter key. The Login window appears, as shown below.
   - The unit is shipped with a default IP address: **192.168.0.10**.
   - See **4.1 - Setting the IP Address** for details on changing the IP address.

3. If desired, choose a language from the drop-down list—the default is *English*.
4. Select a user name from the User Name drop-down list and enter a password in the Password box.
   - The default user name is *admin* (case-sensitive).
   - The default password is *Liebert* (case-sensitive).

NOTE
Some browsers may not permit entering a password on the first attempt. If the password box will not accept an entry, try these steps:
- *Click the **Reset** button.*
- *Try to enter the password again.*

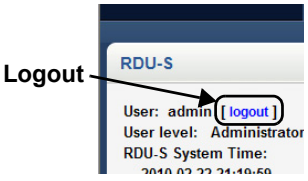
5. Click the **Login** button to enter the Web interface.

The default opening view after login is the Monitor tab, as shown in **6.0 - Monitor Tab**.

5.2 Log Out

To exit the Web interface:

- Click **Logout**, which appears next to the user name in the top left corner of every window.

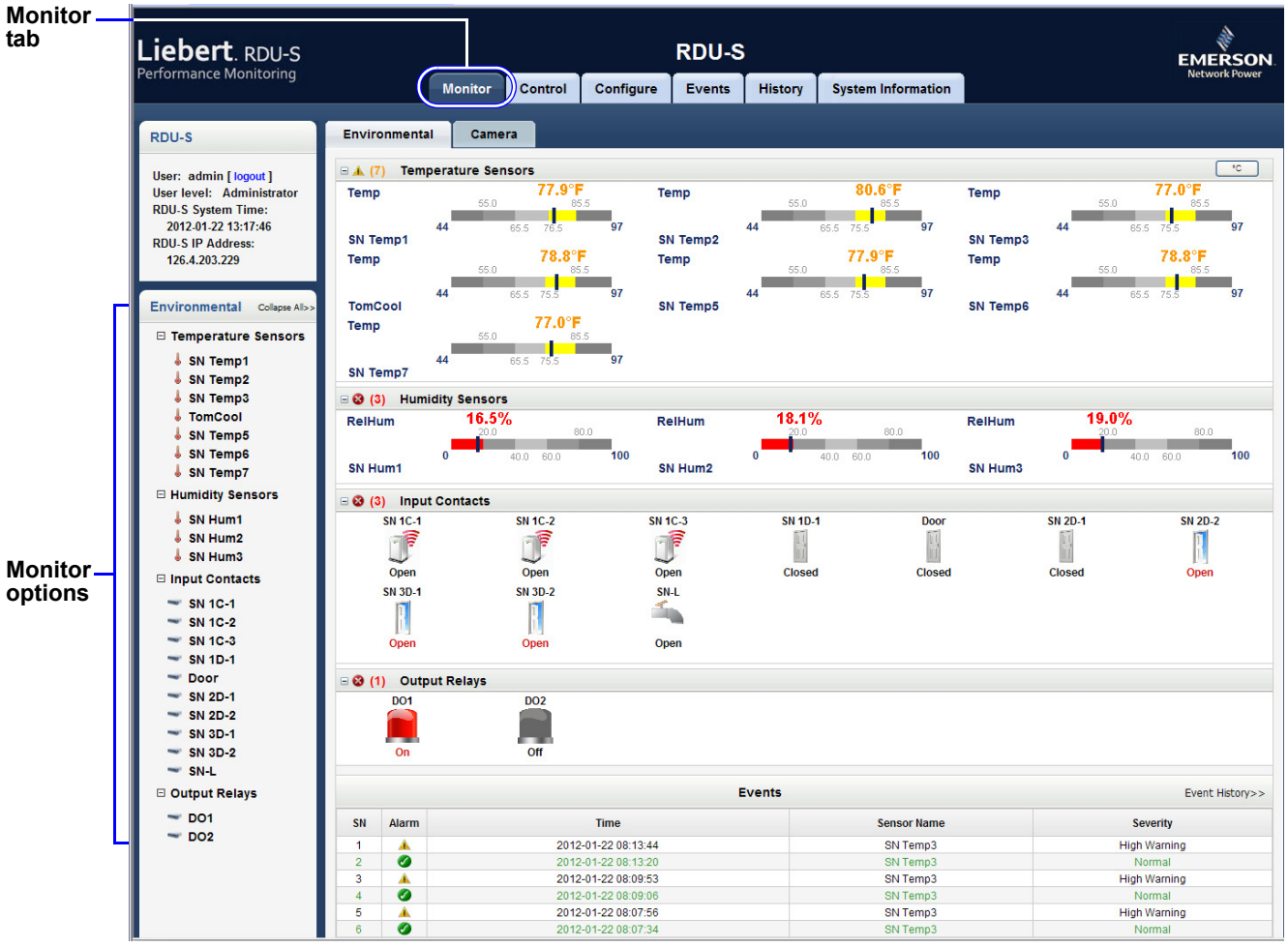


NOTE
*Be sure to exit properly by clicking **Logout** to prevent unauthorized access to the Web interface.*

6.0 MONITOR TAB

The Monitor tab provides access to the following functions:

Function	For details, see:
View status of connected devices	**6.2 - Environmental Monitoring - Connected Devices**
View list of recent alarms and other events	
Configure alarm setpoints for temperature and humidity sensors	
Turn DO1 and DO2 ports On or Off	
Access the camera interface	**6.3 - Camera Monitoring**



6.1 Overview - Monitoring Data

The default opening view displays monitoring data for connected devices, as in the following example.

To view monitoring data for connected devices:

- Click on the **Monitor** tab.
- Click on the **Environmental** subtab. The left pane shows a list of connected equipment, and the right pane shows monitoring data. Each side is organized in groups. If a device in any group has an active alarm:
  - The group expands automatically in the right pane to display all devices in that group.
  - An icon in the group heading indicates the level of severity (Critical or Warning).
  - The number of devices in alarm appears in red text in parentheses.
- Click on a group name—e.g., **Input Contacts**—on either side to expand or collapse the group.
- Click on **Collapse All / Expand All** in the left pane to collapse or expand all groups.

Recent events appear at bottom right with details of each event such as type of alarm, time of occurrence, sensor name and severity. These include the following types of events:

- Critical (Red) - temperature or humidity beyond the high or low Critical setpoint or a Digital Input contact is not in its normal state (open if normally closed or closed if normally open)
- Warning (Yellow) - temperature or humidity beyond the high or low Warning setpoint
- Normal (Green) - device has returned to normal after a critical or warning alarm
- Loss of Comms - no communication with the device

6.2 Environmental Monitoring - Connected Devices

The right pane of the Environmental view displays the status of each connected device and a list of the most recent alarms and other events.

This area also offers access to view and adjust parameters for connected devices—temperature and humidity sensors, input contacts and output relay contacts.

6.2.1 Configure Alarm Setpoints - Temperature and Humidity Sensors

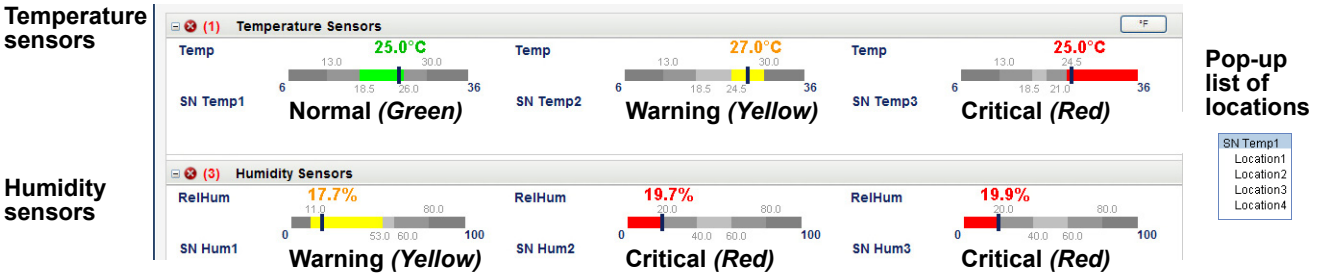
To view or change the name or alarm setpoints of a temperature or humidity sensor:

- Click on the **Monitor** tab.
- Click on the **Environmental** subtab.

  In the right pane, you may change the name and the alarm setpoints to trigger Warning and Critical alarms of a temperature or humidity sensor.

View Sensor Status

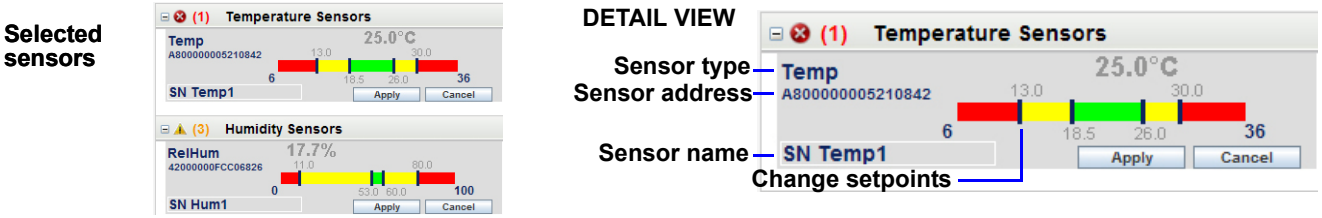
- If needed, click on the sensor group name in the right pane—**Temperature Sensors** or **Humidity Sensors**—to expand the view for connected sensors. The view expands automatically when an alarm is detected for any sensor in the group.
- Each sensor has a graph with the current value displayed above the graph in color to indicate whether the value is in the Normal range (green), Warning (yellow) or Critical (red).
- Hold the mouse over a graph to reveal a pop-up list of configured locations (see **8.6.3 - TH Sensor Configure**).



Edit Temperature or Humidity Alarm Setpoints

- Double-click on a sensor graph to edit the sensor name or alarm setpoints.

  The selected sensor has a gray background, as shown below. The graph ranges are displayed in color: Low and High Critical (red), Low and High Warning (yellow), Normal (green). Along the bottom of the gray area are the sensor names and the **Apply** and **Cancel** buttons.



- The sensor name appears in a text box at the bottom of the gray area—*SN Temp1* and *SN Hum1* in the examples above. To change the name, click in the text box and enter a new name, which may consist of up to 10 characters.
- The numbers below **Temp** and **RelHum** are the Liebert SN sensor addresses, which can be used to identify a sensor. This address may be found on a label on the Liebert SN sensor (see the user manual for your Liebert SN sensor). The sensor address cannot be changed.
- The Warning, Critical and Normal graph ranges are separated by black vertical bars that represent the alarm setpoints. To change a setpoint:
  - Hold the mouse over a black separator until the cursor changes shape.
  - Click-and-drag the bar to adjust the threshold. The value is displayed as you drag the mouse.
  - Release the mouse button at the desired value.
- Click **Apply** to save any changes (or click **Cancel** to close the editing window without saving).

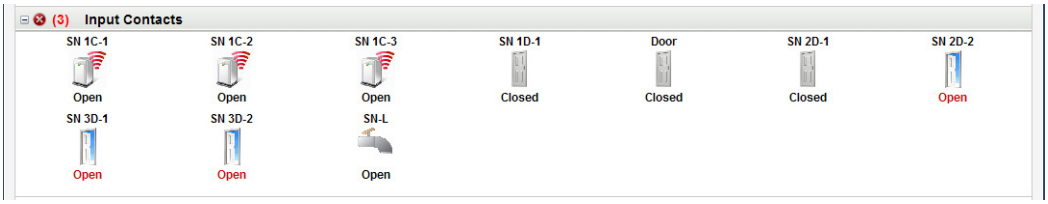
6.2.2 Input Contacts

Click the Input Contacts node in the Monitor structure tree. See **Figure 8** for a typical view.

You can view the working status of the connected digital sensors. The black font under icons signifies normal status and red font signifies alarm. For example, as shown in **Figure 8**, the motion sensor is of black font, which means the sensor is normal and did not detect any alarm. While the door sensor is of red font, it means an alarm has been detected.

Input contacts must be enabled before they will show up on the monitor tab. To enable the input contact, select sensors under the configuration option. See **8.6 - Sensors**.

Figure 8 Input Contacts window



NOTE

If an Input Contact is displayed on the monitor tab, double-clicking on an input contact icon opens the sensor configuration window.

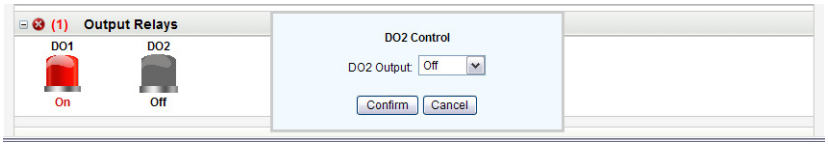
6.2.3 Output Relays

Click the Output Relays node in the Monitor structure tree. See **Figure 9** for a typical view.

This window displays the status of the devices connected to relay port. For example, the DO1 (indicator alarm) turning red indicates that the relay is closed.

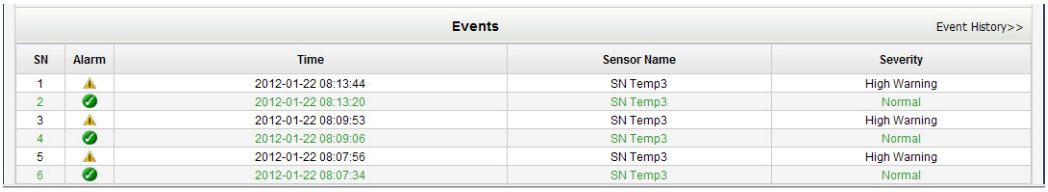
Figure 9 Output Relays window

- Click on the **Monitor** tab.
- If needed, click on the **Environmental** subtab in the left pane and expand the Output Relays section in the right pane.
- The DO ports may be turned On or Off using a shortcut in the Monitor tab as follows (or from the Control tab as described in **3.4 - Connecting a Beacon to the Relay Output Ports**):
  - Double-click a DO1 or DO2 icon to open a pop-up menu.
  - Choose **On** or **Off** from the drop-down list.
  - Click the **Confirm** button to save any changes (or click **Cancel** to close without saving)..



6.2.4 Events List Area

The system will display the latest 20 events here including Critical, High Warning, Loss of Comms and Normal events.



SN	Alarm	Time	Sensor Name	Severity
1	⚠	2012-01-22 08:13:44	SN Temp3	High Warning
2	✓	2012-01-22 08:13:20	SN Temp3	Normal
3	⚠	2012-01-22 08:09:53	SN Temp3	High Warning
4	✓	2012-01-22 08:09:06	SN Temp3	Normal
5	⚠	2012-01-22 08:07:56	SN Temp3	High Warning
6	✓	2012-01-22 08:07:34	SN Temp3	Normal

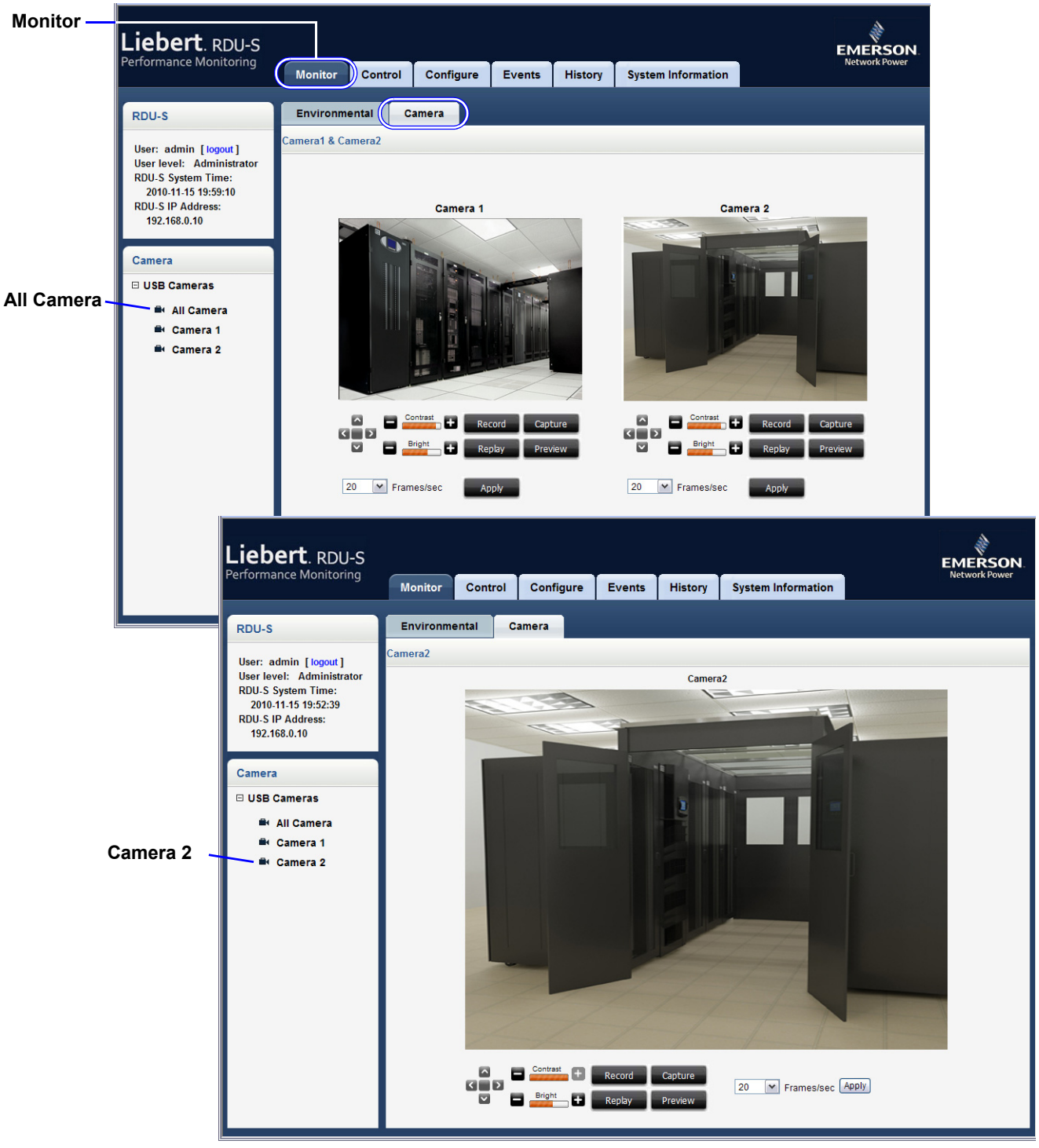
The Event History button is a shortcut to the Events tab; see **9.3 - Event History**.

6.3 Camera Monitoring

Up to two cameras may be connected to the Liebert® RDU-S™ (see **3.5 - Connecting a Stationary or Tilt and Pan Camera to a USB Port**).

To access the camera interface:

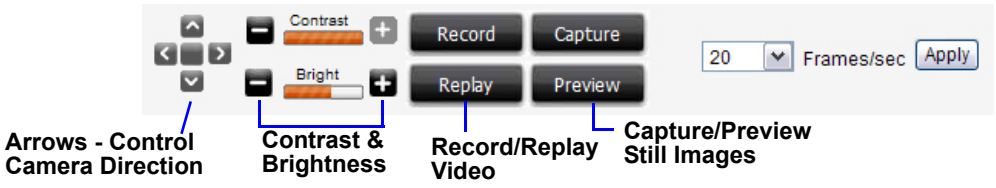
- Click on the **Monitor** tab at the top of the window, then click on the **Camera** subtab.
- In the left pane, click to expand **USB Cameras**, then choose a camera view:
  - Click **All Camera** to display both cameras side-by-side, as shown below.
  - Click **Camera 1** or **Camera 2** to display only one camera image at a time.



6.3.1 Camera Control Buttons

Control buttons appear below each camera image, as shown below.

- Click on the arrows to change the direction of the tilt and pan camera up, down, left and right.
- Click on the plus (+) or minus (-) buttons to increase or decrease contrast and brightness.

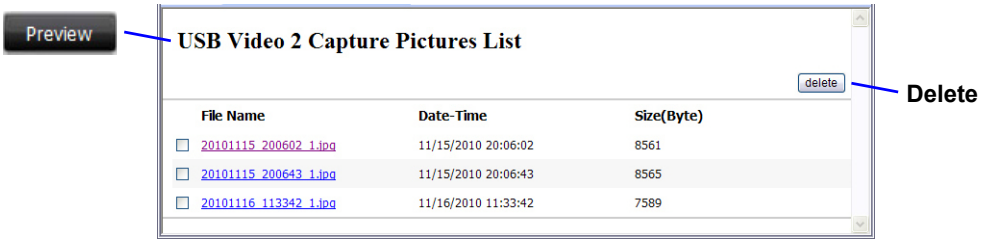


NOTE

An SD card is required for the camera to record video or capture still images; the camera has no memory without the card.

Taking Still Photos

- Click **Capture** to take a still photo in JPG format.
- Click **Preview** to view a list of captured images. The file names are listed as hypertext links, along with the date and time created and file size, as shown below. In this window, you may:
  - View a photo - click on a link to preview the image (close preview window to return to list).
  - Remove a file - check one or more boxes at left, then click the **Delete** button.
  - Save an image - right-click on the file name and select an option.



Recording Videos

- The default frame frequency is 20 frames/second. To change this, choose a number from the Frames/sec drop-down list, then click **Apply**.
- Click **Record** to start a video recording in SM4 format. The button label changes to **Stop**.
- Click **Stop** to end the recording.
- Click **Replay** to view a list of videos, as shown below. The file names are listed as hypertext links, along with the date and time created and file size, as shown below. In this window, you may:
  - View a video - click on a link to replay the video (close replay window to return to list).
  - Remove a file - check one or more boxes at left, then click the **Delete** button.
  - Save an image - right-click on the file name and select an option.

NOTE

1. *Do not pull out the SD card while recording.*
2. *Maximum recording times are:*
   - *2 minutes for an event alarm*
   - *15 minutes for manual recording*

7.0 CONTROL TAB

The Control tab provides access to the following functions:

Function	For details, see:
Restart the Liebert® RDU-S™ after configuration changes (e.g., upgrade firmware)	**7.1 - Reboot**
Turn DO1 and DO2 ports On or Off	**7.2 - Digital Output Control**
Update the unit's firmware	**7.3 - Firmware Upgrade**
Install a new configuration file	**7.4 - Configuration File**
Reset configuration to factory defaults	**7.5 - Restore Factory Defaults**

7.1 Reboot

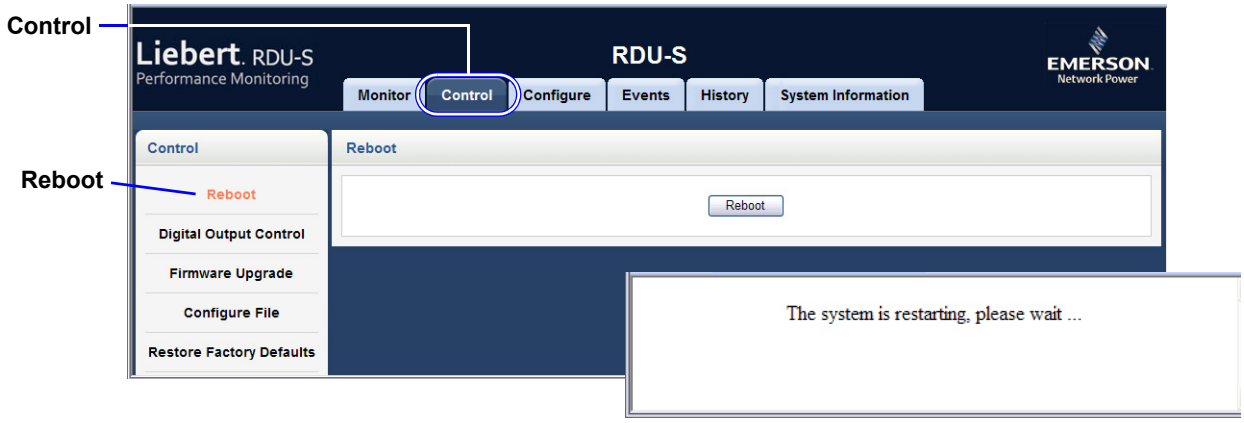
Some configuration operations require rebooting the Liebert RDU-S—for example, after upgrading the firmware. This process will restart the unit without loss of historical data or configuration settings.

To restart the unit:

- Click on the **Control** tab at the top of the window.
- In the left pane, click **Reboot**.
- When ready, click the **Reboot** button at right. A message indicates the unit is restarting.

NOTE

Do not close or refresh your browser or open another browser window. Wait until the process is completed before opening other applications or using the computer for other tasks.



7.2 Digital Output Control

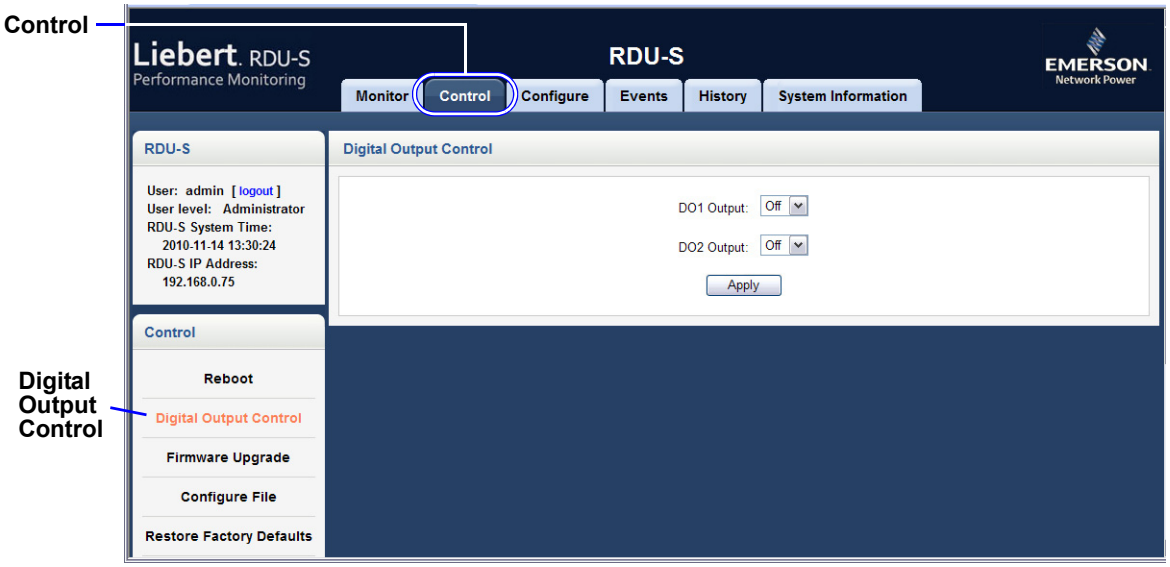
This function allows you to turn power to the DO1 and DO2 ports On or Off. For connection details, see **3.4 - Connecting a Beacon to the Relay Output Ports**.

NOTE

*These controls are also accessible from the Monitor tab (see **6.2.3 - Output Relays**).*

To change the On/Off status of digital output ports:

- Click on the **Control** tab at the top of the window.
- In the left pane, click **Digital Output Control**.
- The current status of the DO1 and DO2 output relay ports—On or Off—is shown at right. For each port you wish to change:
  - Click the arrow to display the drop-down list.
  - Select **On** or **Off**.
- Click **Apply** to save any changes.



7.3 Firmware Upgrade

Visit the Liebert® Web site at **www.liebert.com** to check for firmware updates. The firmware download will include instructions for performing the upgrade.

7.4 Configuration File

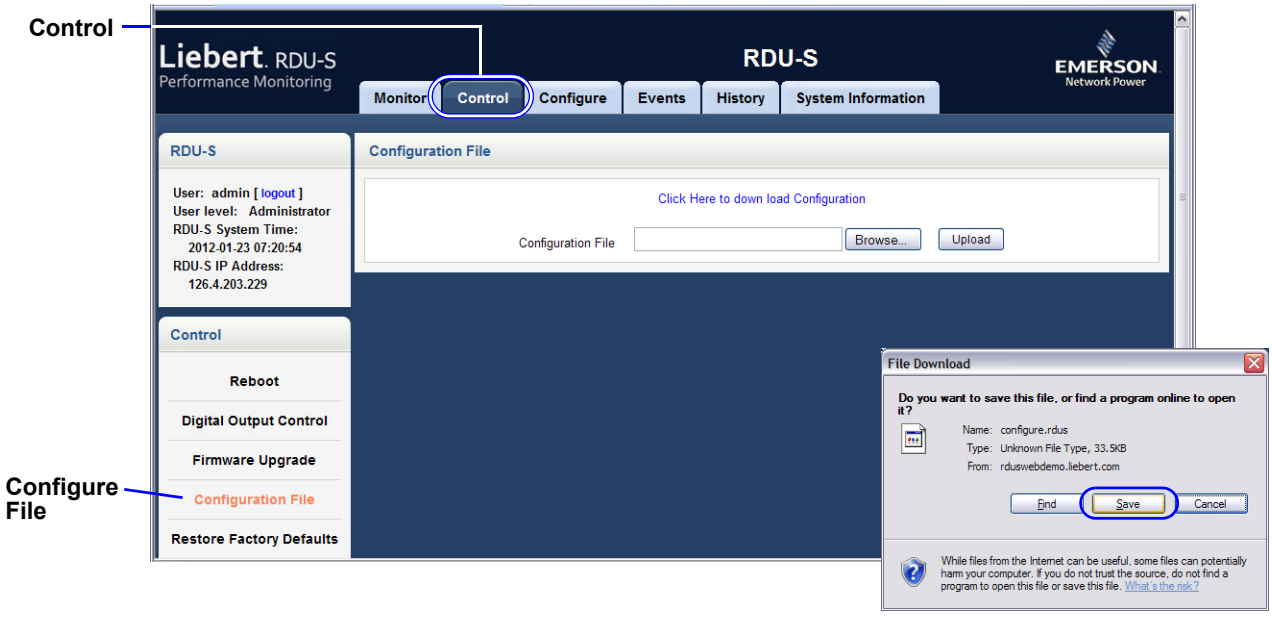
The configuration file is has two functions:

- **Download** - Copies (makes a backup) the current RDU-S configuration to the system running the Web browser.
- **Upload** - Browse to the downloaded configuration file to restore the configuration to the RDU-S. The upload does not restore the network configuration.

7.4.1 Download the Configuration File in the Liebert RDU-S™

Downloading the configuration file from a Liebert RDU-S permits implementing the same settings at multiple sites or on multiple units at the same site. The downloaded file also can be used to restore the settings to a device. Once the file is downloaded, it can be uploaded to the additional devices or to the original Liebert RDU-S.

- Click on the **Control** tab at the top of the window.
- In the left pane, click **Configure File**.
- Click on the link.
- Click the link **Click Here to download Configuration** in the center of the window to download the file from the Liebert RDU-S.
- In the File Download window, click the **Save** button to save the configuration file where you can find it by selecting a destination folder.



7.4.2 Upload the Configuration File to a Liebert® RDU-S™

- When ready to complete the configuration update process, double-click on the file name of the configuration file as described below.
- Specify the full path of the downloaded file in the Configure File box, or click the **Browse** button to locate the file and click **Open**. The configuration file must be named *configure.rdus*.
- When ready to begin, click **Upload**. A message indicates the file upload is in progress.

NOTE
Do not close or refresh your browser or open another browser window. Wait until the process is completed before opening other applications or using the computer for other tasks.

- After the process is completed successfully, restart the Liebert RDU-S (see **7.1 - Reboot**).

7.5 Restore Factory Defaults

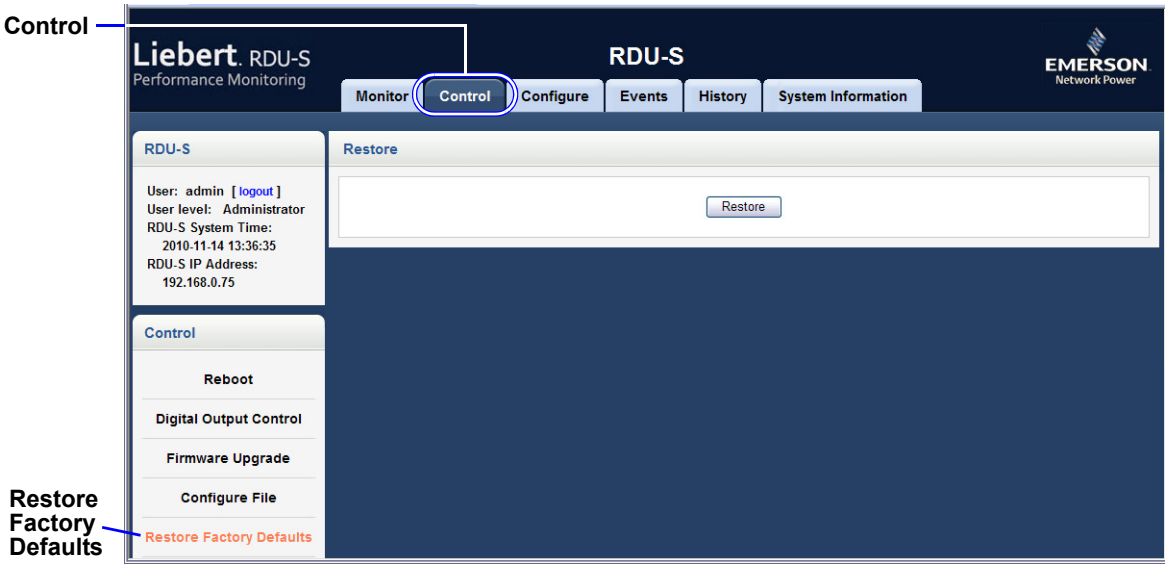
At any time, you may reset all configuration settings to the factory defaults. This includes all user-defined settings for connected devices as well as the unit itself.

Restoring the factory defaults returns the IP address to 192.168.0.10.

To do this:

- Click on the **Control** tab at the top of the window.
- In the left pane, click **Restore Factory Defaults**. A message indicates the unit is restarting. This process may take a few minutes.

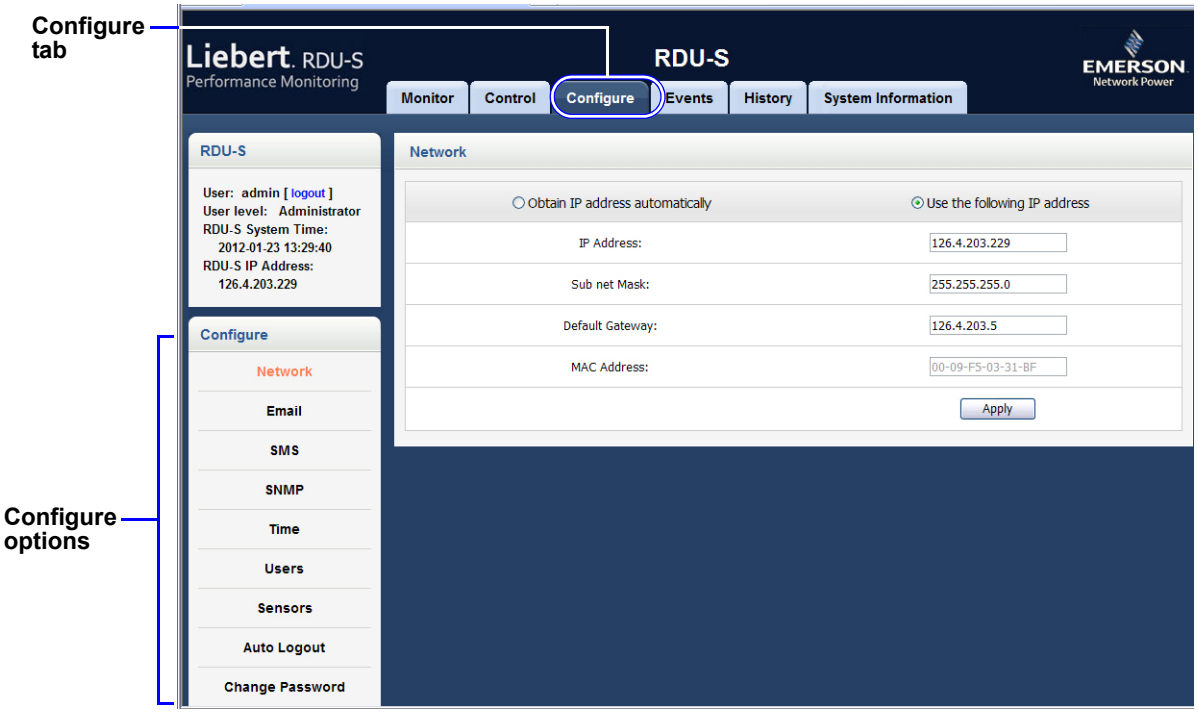
NOTE
Do not close or refresh your browser or open another browser window. Wait until the process is completed before opening other applications or using the computer for other tasks.



8.0 CONFIGURE TAB

The Configure tab provides access to the following functions:

Function	For details, see:
View or change IP address, subnet mask and default gateway for Web interface	**8.1 - Network**
Configure unit to send e-mail notifications of alarms (up to 8 recipients)	**8.2 - E-mail**
Configure up to 20 computers to receive SNMP traps	**8.3 - SNMP**
Set date and time automatically or manually, including Daylight Saving Time	**8.4 - Time**
Add up to 8 users with passwords and full, partial or read-only access	**8.5 - Users**
Configure devices connected to the DI and Liebert SN ports	**8.6 - Sensors**
Specify automatic logout for users after a period of no activity	**8.7 - Auto Logout**
Change administrator's password	**8.8 - Change Password**

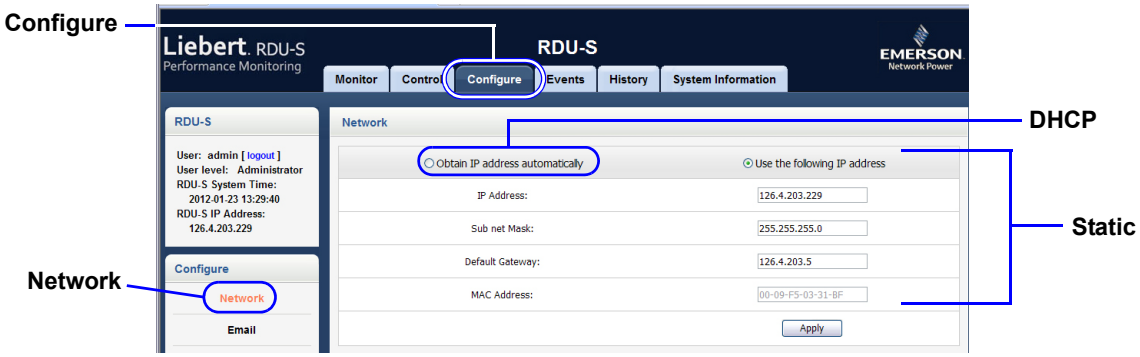


8.1 Network

The Network settings include the IP address, subnet mask and default gateway of the Liebert® RDU-S™. Emerson recommends keeping the default settings in most cases. Check with your network administrator for recommended practices. The MAC address of the unit cannot be changed.

To view or change the network settings:

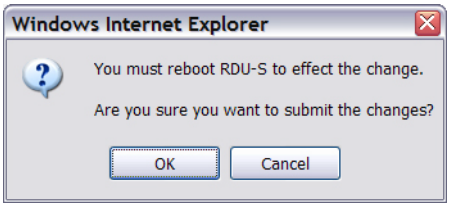
- Click the **Configure** tab at the top of the window.
- Click **Network** at left.



- Determine which method to use for IP address assignment: DHCP (automatic) or Static (fixed address). The factory-set IP address is 192.168.0.10.
  - For DHCP, click the **Obtain IP address automatically** button.
  - To assign a Static IP address, click **Use the following IP address**, then enter the appropriate IP address, subnet mask and gateway address, for example:

IP address	192.168.0.10	*(factory default)*
Subnet mask	255.255.255.0	
Default gateway	192.168.0.1	

- Click **Apply** to save any changes.
- A confirmation window indicates the unit must be rebooted for the change to take effect. Click **OK**, and the unit will reboot.


Windows Internet Explorer
You must reboot RDU-S to effect the change.
Are you sure you want to submit the changes?
OK
Cancel

8.2 E-mail

Use the E-Mail function to configure the Liebert RDU-S to send e-mail notifications of alarms to specified recipients, including the outgoing mail server and e-mail addresses of intended recipients, and to send test messages to verify the configuration.

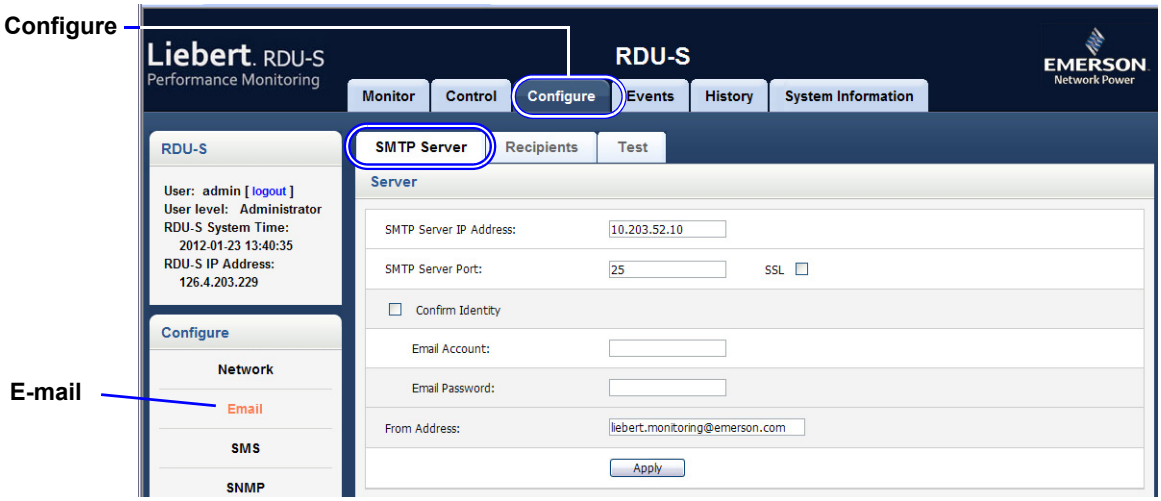
To view or change the e-mail settings:

- Click on the **Configure** tab at the top of the window.
- In the left pane, click **E-mail**.
- Refer to the following sections to configure the unit for e-mail notifications.

8.2.1 SMTP Server

The SMTP Server identifies the outgoing mail server that will be used to send e-mail notifications of alarms to configured recipients.

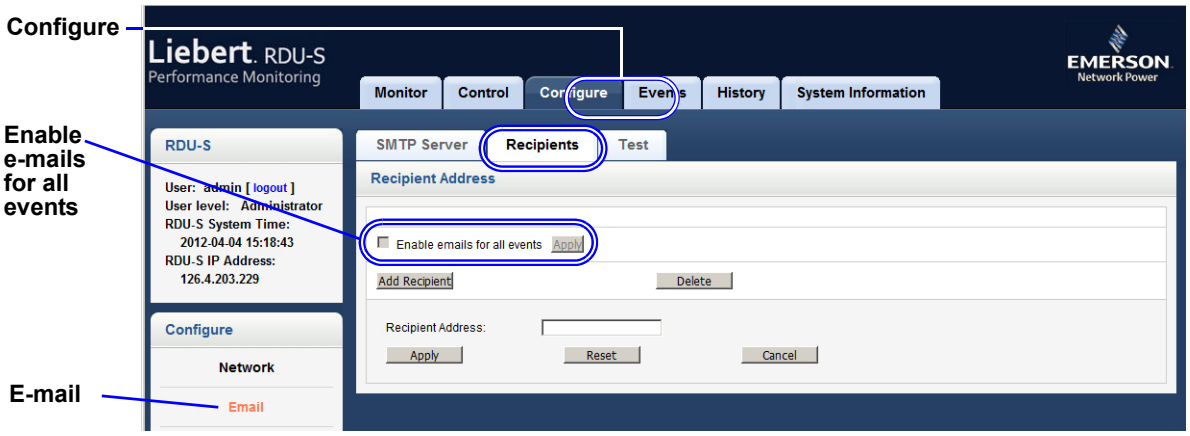
- Click the **SMTP Server** subtab in the right pane.
- Enter the IP address of the outgoing mail server in the SMTP Server IP Address box.
- The SMTP Server Port is used to send the e-mail. Do not change the default port without consulting your e-mail administrator.
- Check the Confirm Identity box to verify the SMTP Server IP Address entry. (Required if SMTP server requires you to be logged in to send e-mail.)
  - Enter your e-mail account user name in the E-mail Account text box.
  - Enter the password for the e-mail account in the E-mail Password text box.
- Enter the sender's e-mail address in the From Address text box. This address will appear on all alarm notifications sent to configured recipients.
- Click **Apply** to save any changes.
- A confirmation window opens. Click **OK** to proceed (or click **Cancel** without saving).



8.2.2 Recipients

Up to eight e-mail addresses may be configured to receive notifications of events.

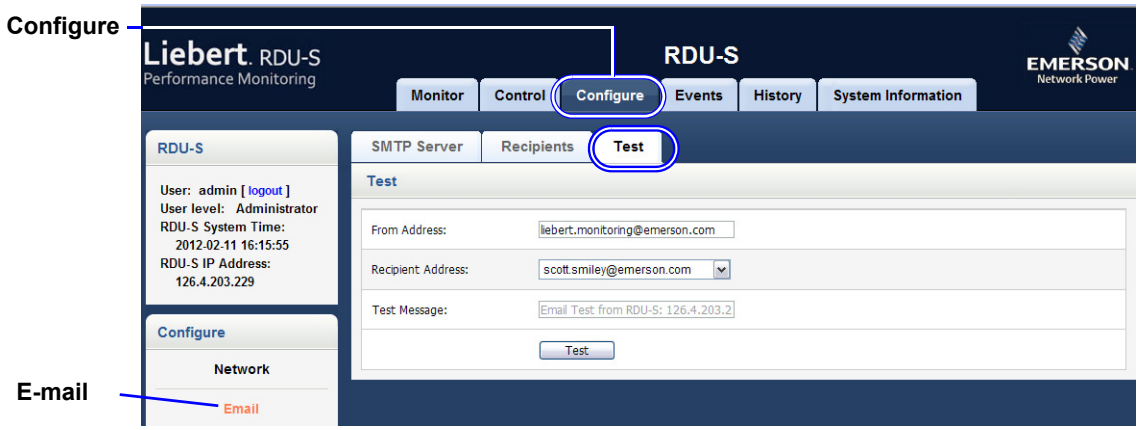
- Click the **Recipients** subtab in the right pane.
- Click the **Add Recipient** button to add an e-mail address.
  - Enter a recipient's e-mail address in the To Address text box. If needed, click **Reset** to clear the entry and re-enter the e-mail address.
  - Click **Apply** to save the address (**Cancel** to close this area without saving).
- To remove an entry from the Recipient Address list, select it and click the **Delete** button.
- Enable emails for all events. By selecting this option the Liebert® RDU-S™ will send an email for all events. If the option is not selected, the event action must be created for events that an email will be generated for.



8.2.3 Test

Send a test message to verify the e-mail configuration.

- Click the **Test** subtab in the right pane.
- Enter an e-mail address in the From Address text box.
- Choose an e-mail address from the Recipient Address list.
- Enter a message in the Test Message box.
- Click the **Test** button. A notification window will indicate success or failure.
- Also check to make sure the recipient received the test message.



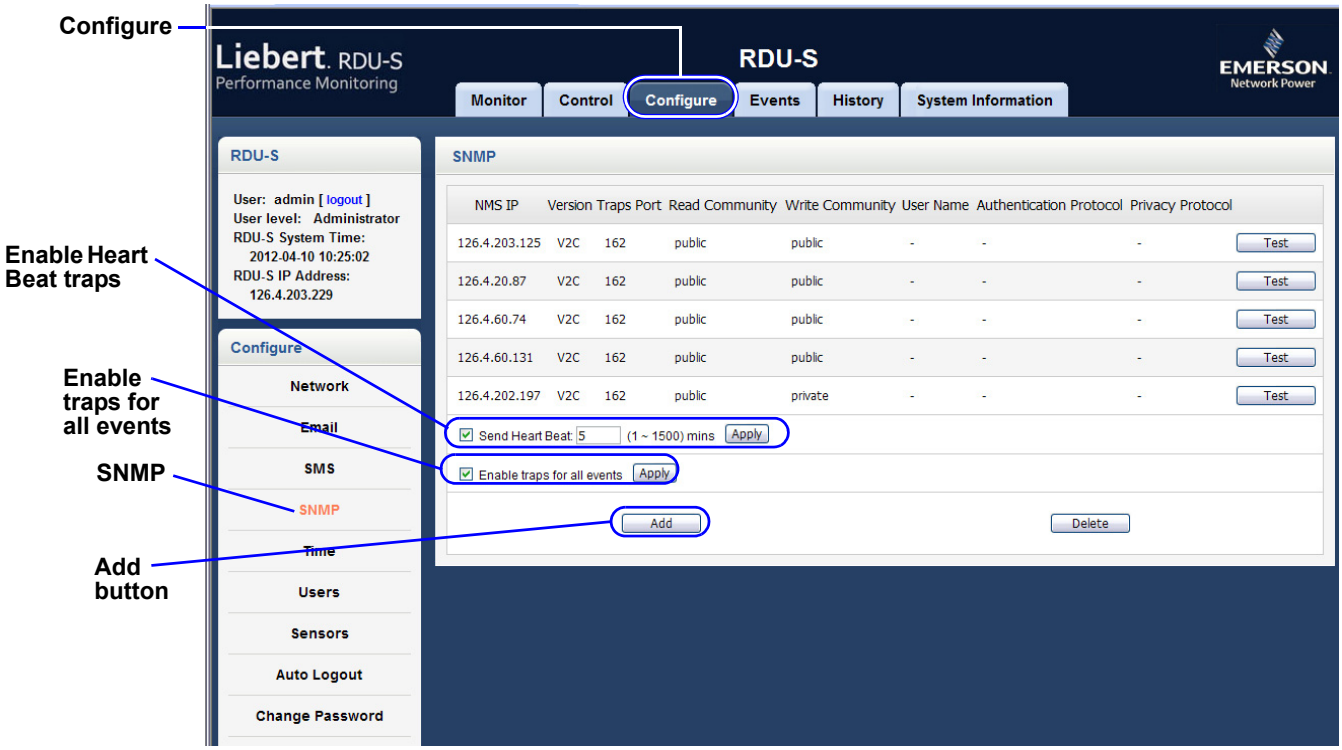
8.3 SNMP

Up to 20 computers may be configured to receive SNMP traps from the Liebert® RDU-S™.

- Click on the **Configure** tab at the top of the window.
- In the left pane, click **SNMP**.
- The Send Heart Beat box is enabled to send traps every 5 minutes by default. To change this:
  - Place a check mark in the Send Heart Beat box to enable the feature (or remove the check mark to disable it).
  - Enter the number of minutes in the text box. Valid entries range from 1 to 1500.
- Click the **Add** button in the right pane to reveal the Add NMS area.
  - Click to specify the SNMP version: **SNMP V2c** or **SNMP V3**.

NOTE
Use SNMP V2c for Liebert Nform.

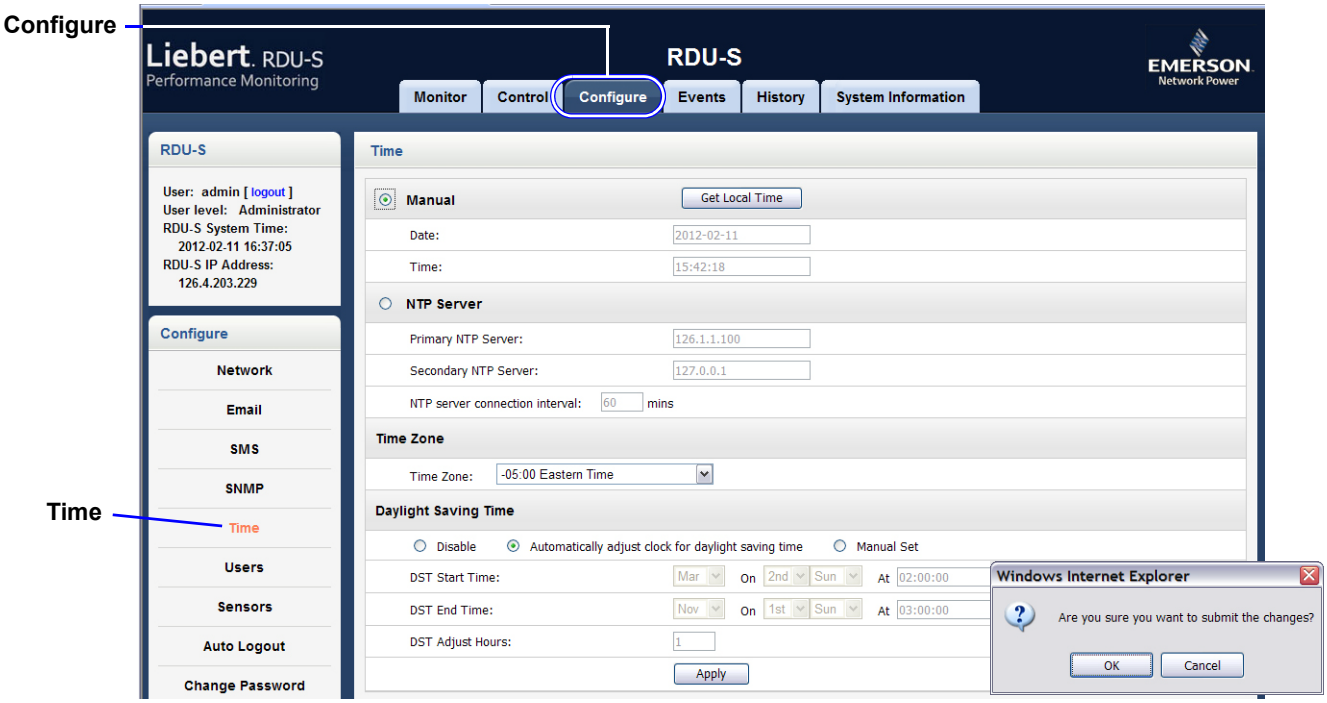
  - Enter the IP address of the NMS to be added in the NMS IP text box.
  - The default Traps Port is **162** (recommended). Enter a different port if needed.
  - The default Read Community is **public**. Enter a different string if needed.
  - The default Write Community is **private**. Enter a different string if needed.
  - When finished, click **Apply** to save the changes (or **Cancel** to close this area without saving).
- To remove an entry from the SNMP list, select it and click the **Delete** button.
- Enable Send Heart Beat. When this option is enabled, the Liebert RDU-S will send a heart beat trap to all NMS IP addresses at specified intervals. Put a checkmark in the "Send Heart Beat," set the interval from 1 to 1500 minutes and click **Apply**.
- Enable traps for all events. This option configures the Liebert RDU-S to send a trap for all events. Put a checkmark in the "Enable traps for all events" and click **Apply** to enable this option. If the option is not selected, then events that require traps sent must be configured under the **Events** tab>**Actions>Functions**, see **9.1 - Digital Input Actions** and **9.2 - Temp & Hum Actions**.



8.4 Time

The date and time may be set manually or automatically using a Network Time Protocol (NTP) server. Other options include specifying the time zone and the method of Daylight Saving Time adjustment.

- Click on the **Configure** tab at the top of the window.
- In the left pane, click **Time**.
- Choose a method for entering the time:
  - Click **Manual** to set the date and time manually:
    - Click the **Get Local Time** button if desired. The Date and Time boxes will be completed in the correct format but may be edited if needed.
    - Enter the Date in the format **yyyy-mm-dd**—for example, *2010-11-14* for Nov. 14, 2010.
    - Enter the Time in the format **hh:mm:ss**—for example, *15:17:05* for 3:17 p.m.
  - Click **NTP Server** to set the time automatically using a Network Time Protocol server:
    - Enter a valid IP address in the Primary NTP Server box.
    - If desired, enter a valid IP address in the Secondary NTP Server box.
    - Specify how often to synchronize the time in the NTP Server Connection Interval box. The default is every 60 minutes.
- Choose an entry from the Time Zone list—for example, *-05:00 Eastern Time*.
- Choose an option for Daylight Saving Time:
  - Click **Disable** to prevent any adjustment for Daylight Saving Time.
  - Click **Automatically adjust clock for daylight saving time** to specify automatic setting.
  - Click **Manual Set** to specify when and how much to adjust the time:
    - Enter the beginning of the Daylight Saving Time period in the DST Start Time box.
    - Enter the ending of the Daylight Saving Time period in the DST End Time box.
    - Specify the number of hours to use for changing the time in the DST Adjust Hours box. The default is 1.
- When finished, click **Apply** to save the changes.



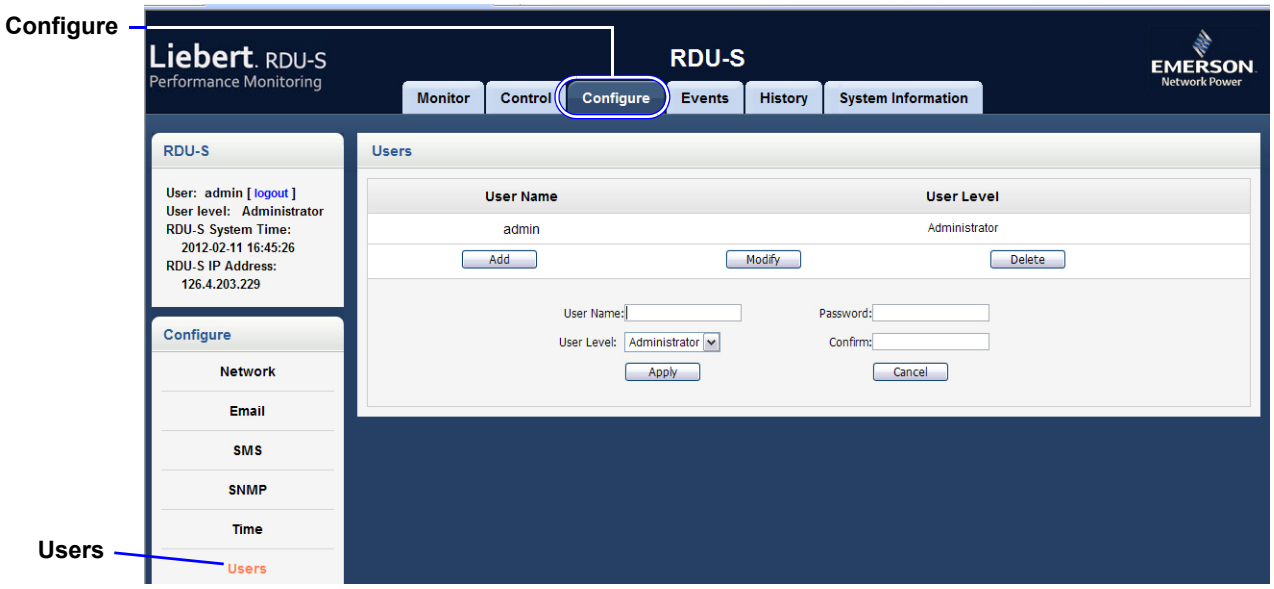
8.5 Users

Up to 12 additional users may be configured with varying levels of access. Passwords are required for all users for security purposes. Three levels of access are available:

Type of User	Maximum # Users
• **Administrator** - access to all features	Three Administrator-level users
• **Manager** - access to some features	Five Manager-level users
• **Read Only** - no access to configuration	Five Read Only users)

To add, modify or delete users:

- Click on the **Configure** tab at the top of the window.
- In the left pane, click **Users**.
- The Users list appears in the right pane. The example below shows the factory-set default user name—*admin*—with Administrator privileges.
- Click the **Add** button to add a user (or select a user, then click **Modify** to edit a user):
  - Enter a name in the User Name text box.
  - Select an option for user privileges from the User Level drop-down list.
  - Enter a password in the Password box.
  - Re-enter the password in the Confirm box.
  - Click **Apply** to save the address (or **Cancel** to close this area without saving).
- To remove an entry from the Users list, select it and click the **Delete** button.



8.6 Sensors

The Sensors option has three subtabs to configure devices connected to the DI and Liebert SN ports. The Liebert® RDU-S™ supports a maximum of:

SN Ports

- 10 temperature sensors
- 10 humidity sensors
- 3 Liebert SN dry contacts (9 inputs)
- 3 Liebert SN door contacts (6 inputs)
- 1 Liebert SN leak sensor

DI Ports

- 3 sensors—smoke or motion any combination

To access the sensor configuration options:

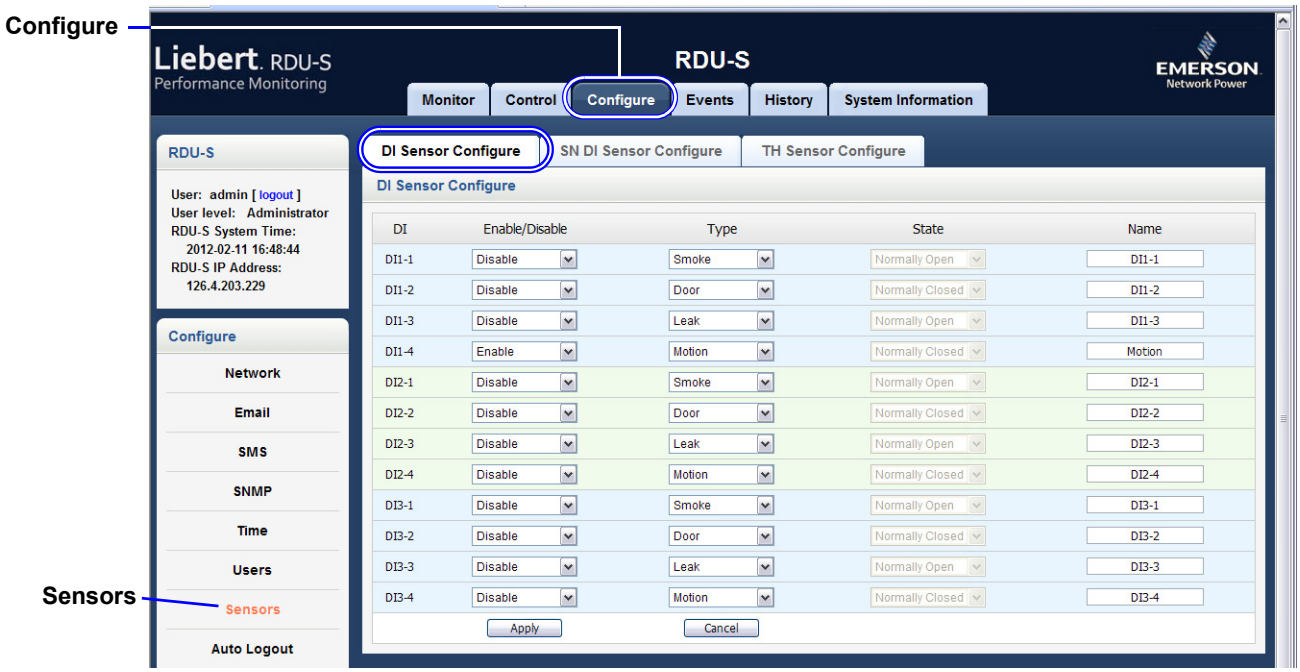
- Click on the **Configure** tab at the top of the window.
- In the left pane, click **Sensors**.
- Click on a subtab to configure the sensors as described in the following sections:
  - **8.6.1 - DI Sensor Configure** - smoke/motion detectors (DI ports)
  - **8.6.2 - SN DI Sensor Configure** - dry contacts /door switches (Liebert SN sensor ports)
  - **8.6.3 - TH Sensor Configure** - temperature/humidity sensors (Liebert SN sensor ports)

8.6.1 DI Sensor Configure

Use the DI Sensor Configure subtab to configure digital input smoke and motion detectors that are connected to the digital input ports DI1-3 (see **3.2 - Digital Input Ports DI1, DI2, DI3**).

- Click the **DI Sensor Configure** subtab in the right pane.
- The DI column lists four sensors for each digital input port—for example, the labels for the DI1 port are DI1-1, DI1-2, DI1-3 and DI1-4. (Only smoke and motion sensors are supported.)

  For each connected sensor:
  - Select the appropriate smoke or motion detector port. Example if a motion is plugged into DI1, then select DI1-4 and enable that port.
  - Choose **Enable** from the Enable/Disable list to activate (or **Disable** to deactivate) the sensor. All sensors are disabled by default.
  - The type of sensor should be shown. Do not change the Type unless instructed by the factory.
  - Enter a sensor label in the Name column to help identify its location. The default name is the same as the DI column label—e.g., *DI1-1*.
- When finished, click **Apply** to save the changes (or **Cancel** to revert to original values).

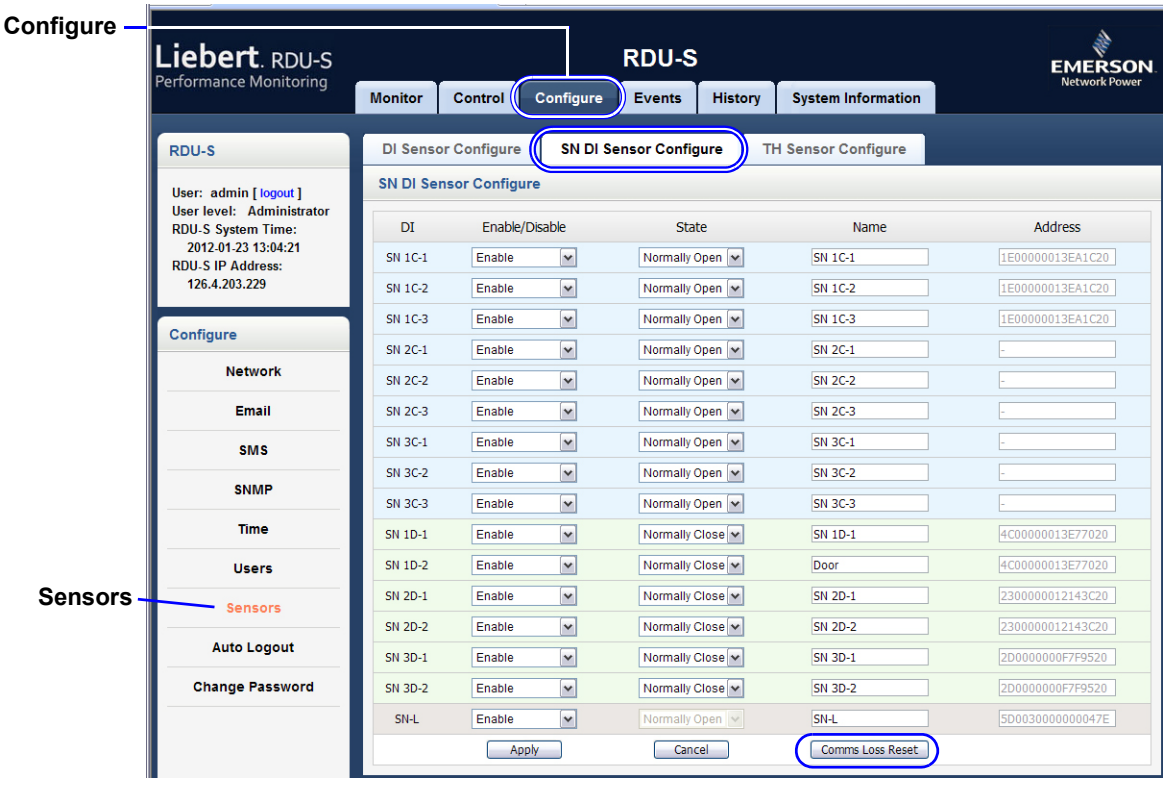


8.6.2 SN DI Sensor Configure

Use the SN DI Sensor Configure subtab to configure Liebert SN digital input (SN-3C), door switch (SN-2D) and leak detection (SN-L) sensors that are connected to Liebert SN sensor ports (see **3.3 - Liebert SN Sensor Ports**).

- Click the **DI Sensor Configure** subtab in the right pane. The Address column at the far right displays the sensor address for all connected sensors.
- The DI column lists three inputs for each SN-3C sensor (e.g., SN 1C-1, SN 1C-2, SN 1C-3), two inputs for each SN-2D sensor (e.g., SN 1D-1, SN 1D-2) and one input for SN-L sensor (SN-L).

  For each connected sensor:
  - Choose **Enable** from the Enable/Disable list to activate (or **Disable** to deactivate) the sensor. All sensors are disabled by default.
  - Choose the sensor's normal operating condition from the State list: **Normally Open** or **Normally Closed**. The state varies according to the type of sensor. By default, door switch (SN-2D) sensors are *Normally Closed* and digital input (SN-3C) sensors are *Normally Open*. The leak sensor's state cannot be changed.
  - Enter a sensor label in the Name column to help identify its location. The default name is the same as the DI column label—e.g., *SN 1C-1*.
  - The Address column displays the sensor address to help identify sensors. This address may be found on a label on the Liebert SN sensor (see the user manual for your Liebert SN sensor). The sensor address cannot be changed.
- When finished, click **Apply** to save the changes (or **Cancel** to revert to original values)
- **Comms Loss Reset**: this button clears the loss of comms alarm from the events on the Monitor tab and resets the alarm LED leaves it in the events list.

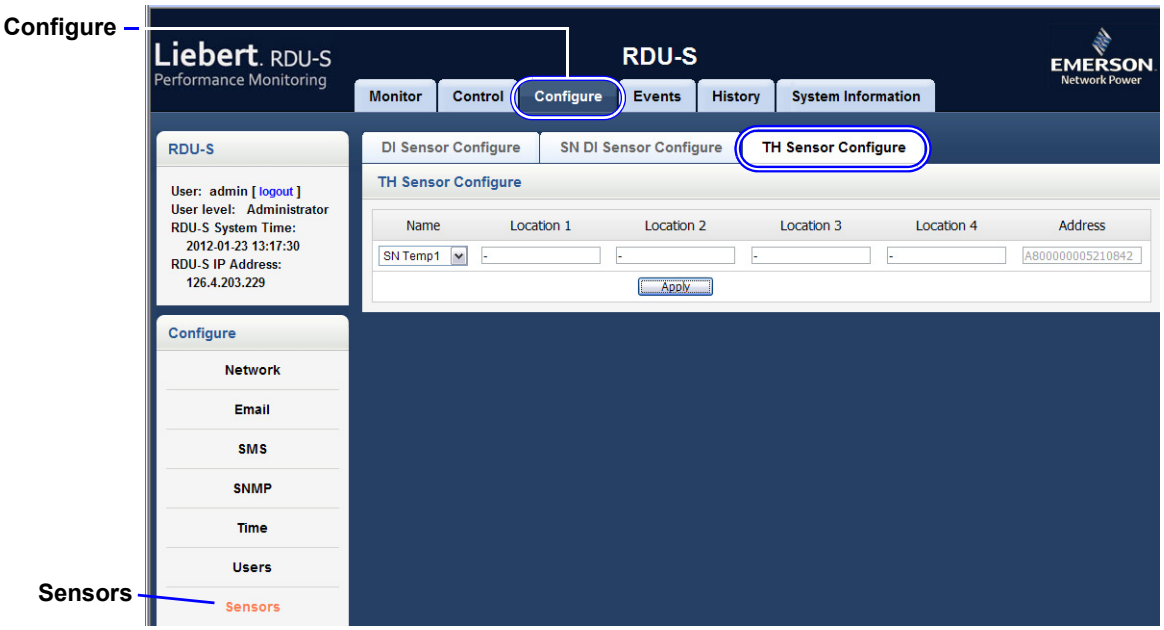


8.6.3 TH Sensor Configure

Use the TH Sensor Configure subtab to configure Liebert SN temperature and humidity sensors that are connected to Liebert SN sensor ports (see **3.3 - Liebert SN Sensor Ports**). A maximum of 10 temperature and 10 temperature/humidity sensors may be configured.

- Click the **TH Sensor Configure** subtab in the right pane. The Address column at the far right displays the sensor address for all connected sensors.
- The Name column lists all temperature and humidity sensors that are connected to Liebert SN sensor ports.

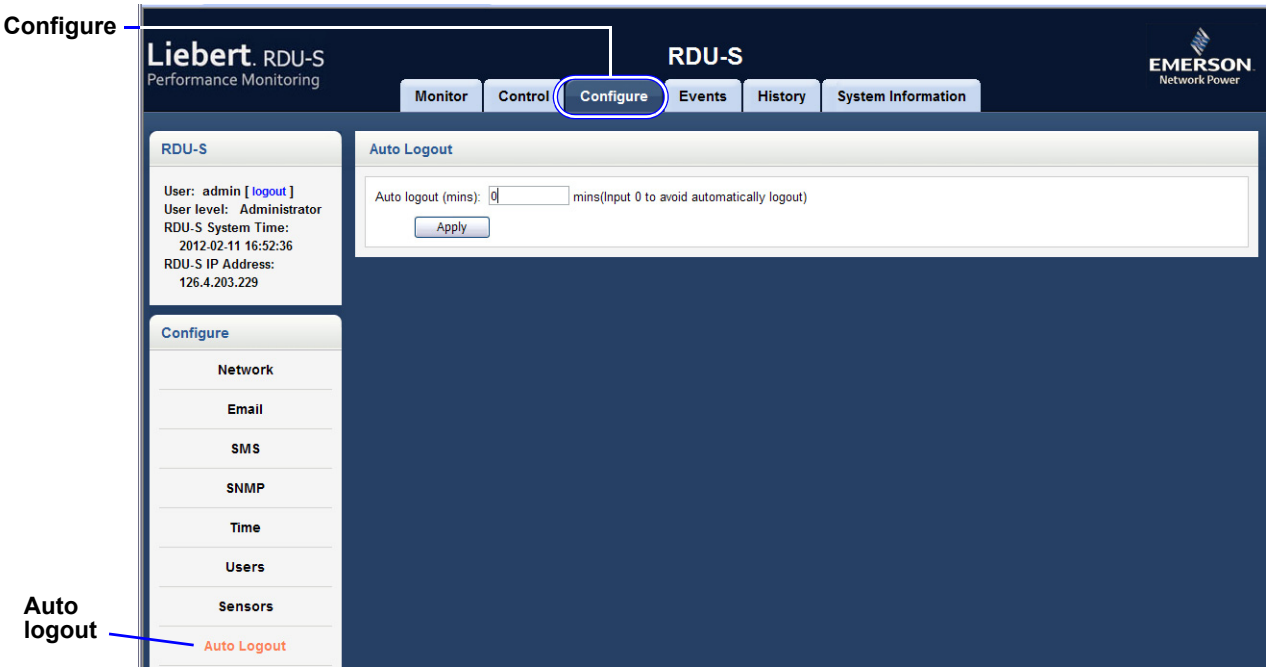
  For each connected sensor:
  - Choose a sensor from the Name list.
  - Enter descriptive text for up to four locations—e.g., *3rd floor computer room*.
  - The Address column displays the sensor address to help identify sensors. This address may be found on a label on the Liebert SN sensor (see the user manual for your Liebert SN sensor). The sensor address cannot be changed.
- When finished, click **Apply** to save the changes.



8.7 Auto Logout

The Liebert® RDU-S™ may be configured to log users out automatically after a period of no activity, ranging from 0 to 15 minutes. A value of 0 may be used to disable the Auto Logout feature.

- Click on the **Configure** tab at the top of the window.
- In the left pane, click **Auto logout**.
- Enter the time in minutes in the Auto Logout box.
  - Enter 0 (zero) to disable the Auto Logout feature.
  - Valid entries for automatic logout range from 1 to 15 minutes. After no activity is detected in the Web interface for the specified time, the system will log out and return to the login window.
- Click **Apply** to save any changes.



8.8 Change Password

This option allows the user logged in to change their password. An administrator can change any user password with the user feature. Also refer to **8.5 - Users**.

NOTE

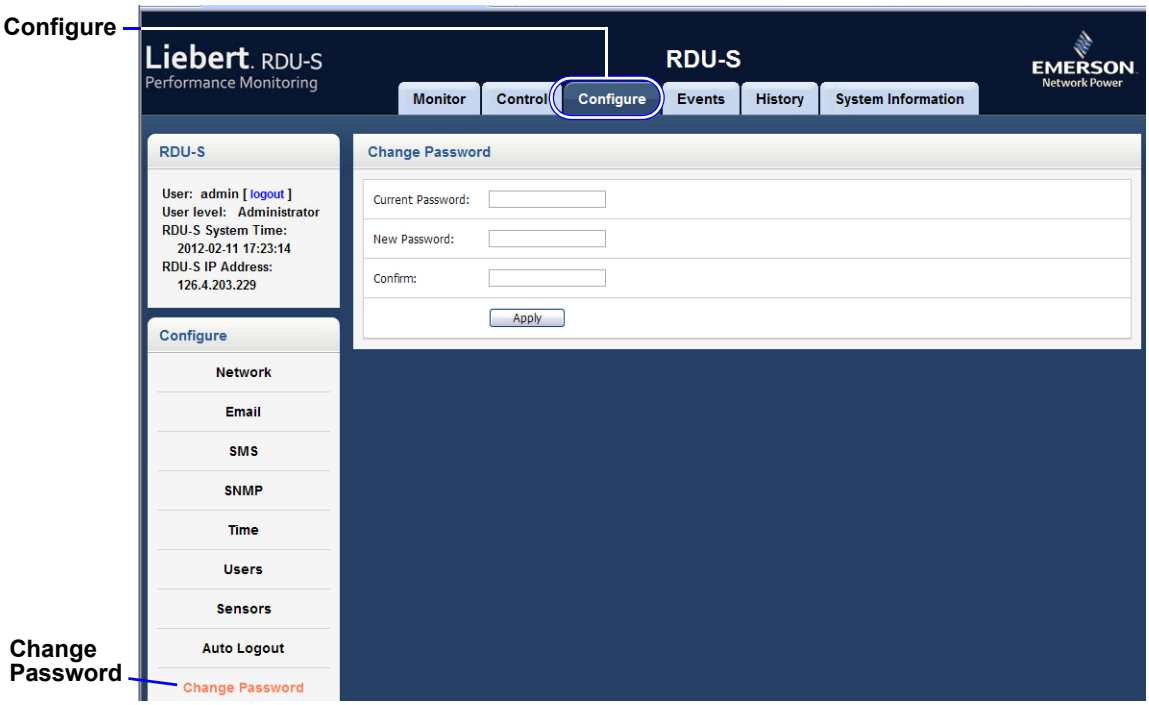
The Liebert® RDU-S™ has a factory-set default user with full administrator privileges.

- ***User Name*** *(default is admin)*
- ***Password*** *(default is Liebert)*

For security, be sure to change the default password for this built-in administrator account.

To change the password for a current user:

- Log in with the user name whose password you wish to change.
- Click on the **Configure** tab at the top of the window.
- In the left pane, click **Change Password**.
- Enter the user's password in the Current Password box.
- Enter a new password in the Password box.
- Re-enter the new password in the Confirm box.
- Click **Apply** to save the changes.

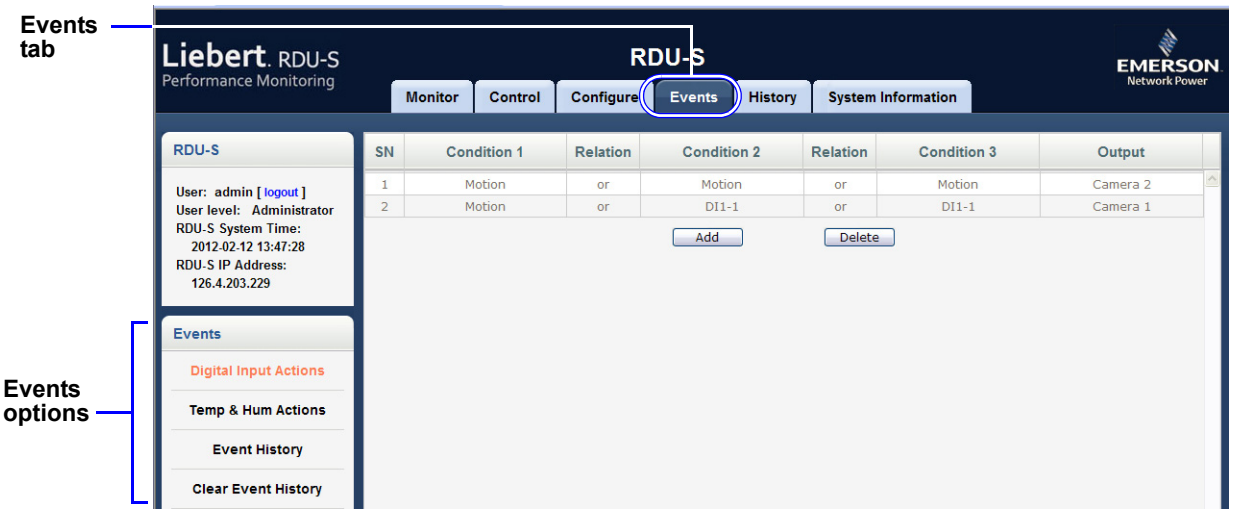


9.0 EVENTS TAB

Use the Events tab to view and export Critical, Warning and Notification events, configure alarm conditions that will trigger actions—such as sending an e-mail notification or activating a camera when an alarm occurs—and delete all event records from the unit.

This section provides details for the following functions:

Function	For details, see:
Define digital input events that will trigger actions	**9.1 - Digital Input Actions**
Define temperature and humidity events that will trigger actions	**9.2 - Temp & Hum Actions**
View and export events	**9.3 - Event History**
Delete all event records from the Liebert® RDU-S™	**9.4 - Clear Event History**

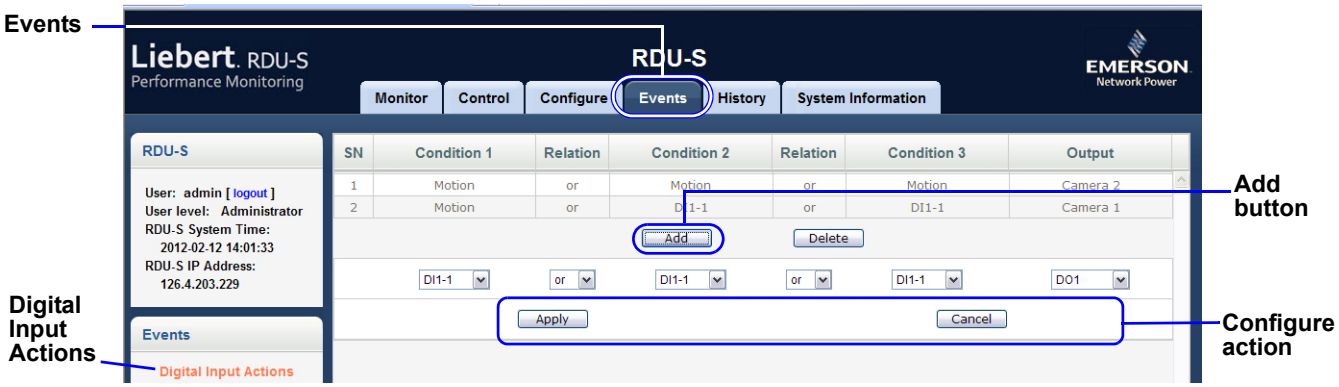


9.1 Digital Input Actions

Digital input sensor alarms may be configured to trigger an action such as sending an e-mail or text message, activating a camera or turning on a light. Up to 64 actions may be configured from a single alarm or a combination of alarms from as many as three sensors.

These actions apply to digital input sensors connected to digital input ports or Liebert SN sensor ports. For details, see **3.2 - Digital Input Ports DI1, DI2, DI3** and **3.3 - Liebert SN Sensor Ports**.

- Click on the **Events** tab at the top of the window.
- In the left pane, click **Digital Input Actions**.
- Click the **Add** button in the right pane to reveal the configure action area.



- Select options from the drop-down lists to specify the alarm conditions for an action. This example activates a camera when alarms occur in all three specified sensors:

Condition 1	Relation	Condition 2	Relation	Condition 3	Output
DI1-1	and	SN 1D-1	and	SN 2D-2	Camera 1

  - **Conditions 1-3**: Choose the sensor where the alarm should occur. This may be any digital input sensor connected to a digital input (DI1-3) or Liebert SN sensor port.
  - **Relation**: Choose a logical operator (**and** / **or**) for each pair of alarms from different sensors to specify whether both or either must occur; these operations are performed left to right.
  - **Output**: Choose an action to take place when an alarm is generated based on these conditions. Output choices include:
    - E-mail, SMS, Video, Digital Output and NMS (SNMP TRAPS).
- When finished, click **Apply** to save the action (or click **Cancel** to close this area without saving).
- Repeat these steps to add other actions as needed. A maximum of 64 actions may be created.

NOTE

If only one event is to be used to trigger an action, choose that condition for all three condition boxes and use the ***or*** *operator between each.*

NOTE

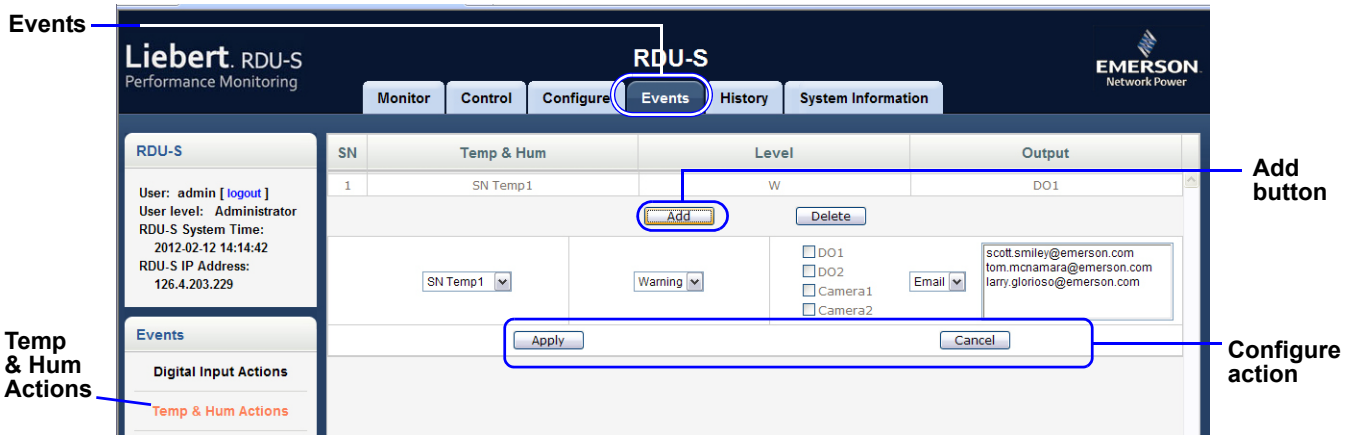
Multiple e-mail and NMS addresses may be selected by holding down the shift key and using the mouse to select multiple e-mail addresses.

9.2 Temp & Hum Actions

Temperature and humidity sensor alarms may be configured to trigger an action such as sending an e-mail or text message, activating a camera or turning on a light. Up to 64 actions may be configured from a single alarm or a combination of alarms from as many as three sensors.

These actions apply to temperature and humidity sensors connected to Liebert SN ports. For details, see **3.3 - Liebert SN Sensor Ports**.

- Click on the **Events** tab at the top of the window.
- In the left pane, click **Temp & Hum Actions**.
- Click the **Add** button in the right pane to reveal the configure action area.



- Select options from the drop-down lists to specify the alarm conditions for an action, for example:

Temp & Hum	Level	Output
SN Temp1	Warning	E-mail: abc@xyz.com

  - **Temp & Hum**: Choose the sensor where the alarm should occur. This may be any temperature and humidity sensor connected to a Liebert SN sensor port.
  - **Level**: Choose the user-configured **Critical** or **Warning** alarm threshold for the sensor that will trigger the action (see **6.2.1 - Configure Alarm Setpoints - Temperature and Humidity Sensors**).
  - **Output**: Choose all actions to take place when an alarm is generated based on the specified conditions. Output choices include:
    - **DO1 / DO2**: Check boxes to activate output relays DO1 or DO2 (see **3.4 - Connecting a Beacon to the Relay Output Ports**).
    - **Camera1 / Camera2**: Check boxes to activate USB cameras connected to USB1 or USB2 ports (see **3.5 - Connecting a Stationary or Tilt and Pan Camera to a USB Port**).
    - **E-mail / SMS / NMS**: Choose from drop-down list, specify e-mail address and IP address for NMS or SMS address in the box.
- When finished, click **Apply** to save the action (or click **Cancel** to close this area without saving).
- Repeat these steps to add other actions as needed. A maximum of 64 actions may be created.

NOTE

The first 20 sensors are Liebert SN sensors and are supported. The remaining SerialT and SerialH sensors are not used.

NOTE

Multiple e-mail and NMS addresses may be selected by holding down the shift key and using the mouse to select multiple e-mail addresses.

9.3 Event History

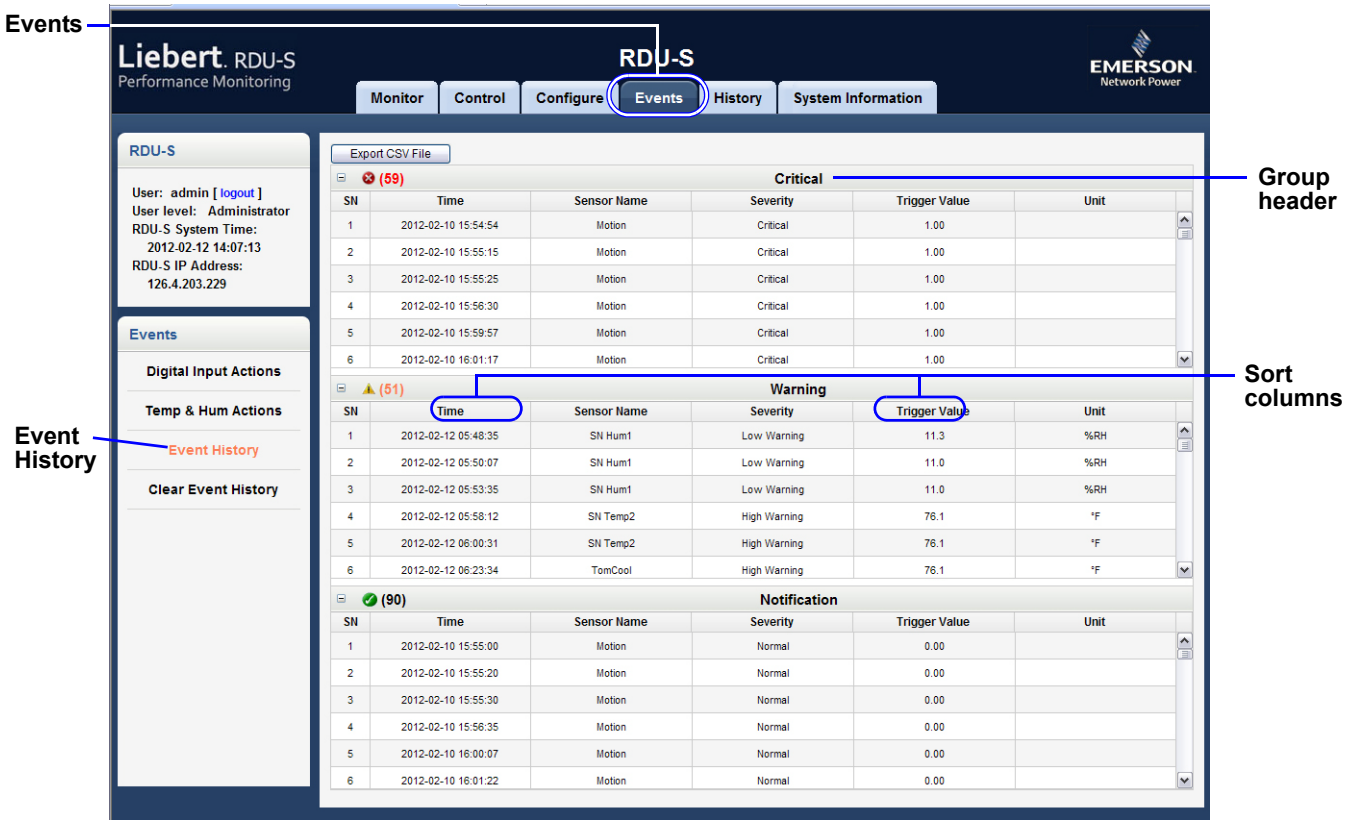
The Event History window displays data for Critical, Warning and Notification events: when and where each event occurred, alarm severity level and the value that triggered the event.

- Click on the **Events** tab at the top of the window.
- In the left pane, click **Event History**.
- View or export the data as follows.

9.3.1 Event History - Viewing Records

The right pane displays event records in three groups—Critical, Warning and Notification. Each group has a header showing the number of events in that group.

- Click on a group header to expand or collapse the records in the group.
- Events may be sorted by time or sensor reading in ascending or descending order:
  - Click **Time** to sort events by the time of occurrence.
  - Click **Trigger Value** to sort by the sensor reading that prompted the event.

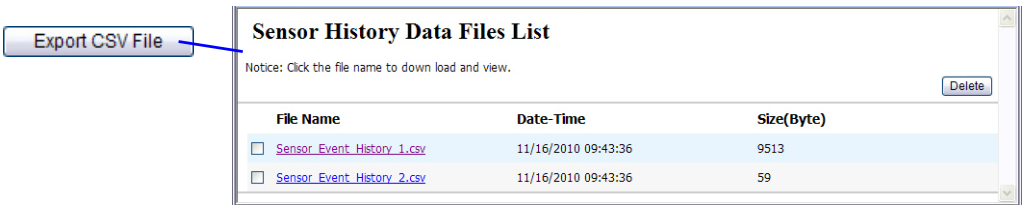


9.3.2 Event History - Exporting Records

Event records may be exported to a CSV file—a comma-delimited file that may be opened with a spreadsheet application such as Microsoft Excel. (To delete data, see **9.4 - Clear Event History**.)

- Click **Export CSV File** to generate a file.

  A new window displays a list of all files exported from the Events and History tabs. Event history files are named *Sensor_Event_History_#* (where # is a number) with the extension *.csv*. The file names are listed as hypertext links, along with the time created and file size, as shown below.
- In this window, you may:
  - View a file - click on a link to preview the file (close preview window to return to list).
  - Remove a file - check one or more boxes at left, then click the **Delete** button.
  - Save a file - right-click on the file name and select an option.

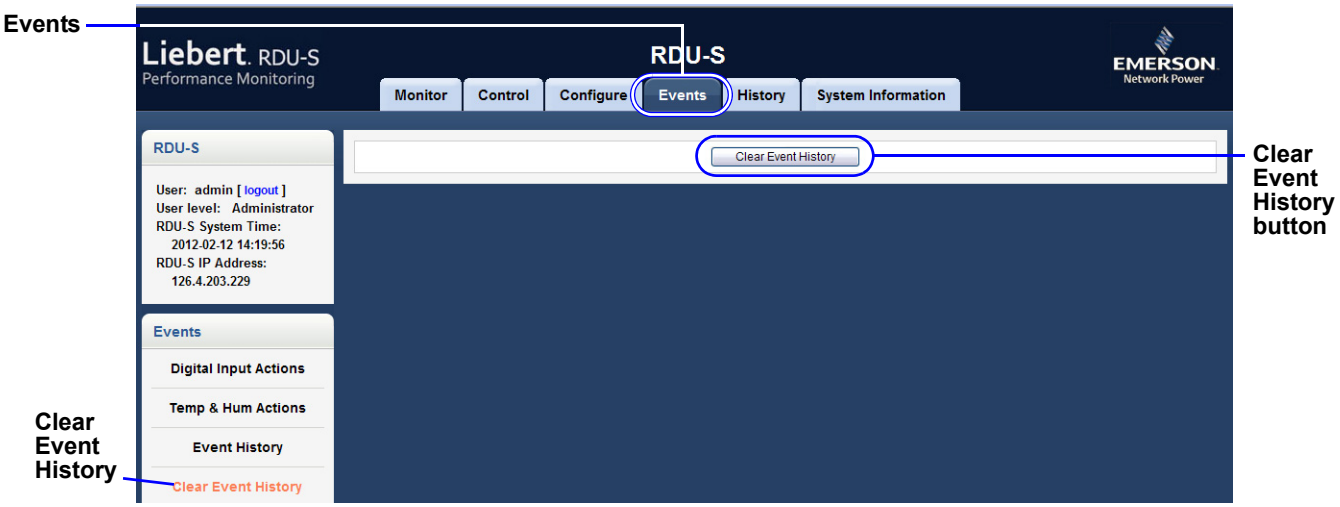


9.4 Clear Event History

The Clear Event History feature will permanently delete all event records from the Liebert® RDU-S™. Before doing this, be sure to export the data to a file if you wish to save it (see **9.3.2 - Event History - Exporting Records**). Set up a regular schedule to export, then delete data to keep a log of events over time.

To delete all data:

- Click on the **Events** tab at the top of the window.
- In the left pane, click **Clear Event History**.
- When ready, click the **Clear Event History** button in the right pane.
- A confirmation window opens. Click **OK** to proceed (or click **Cancel** to close the editing window without deleting all data).

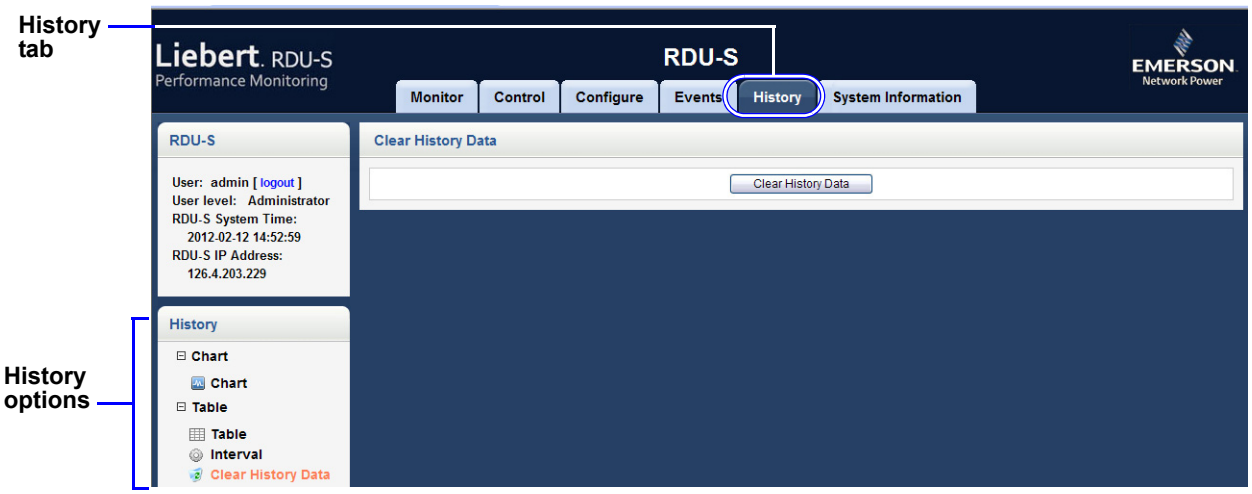


10.0 HISTORY TAB

Use the History tab to view historical data in graph or table format, specify the interval for collecting data, export the data to a file that may be opened with a text editor or spreadsheet application and delete all historical data records from the unit.

This section provides details for the following functions:

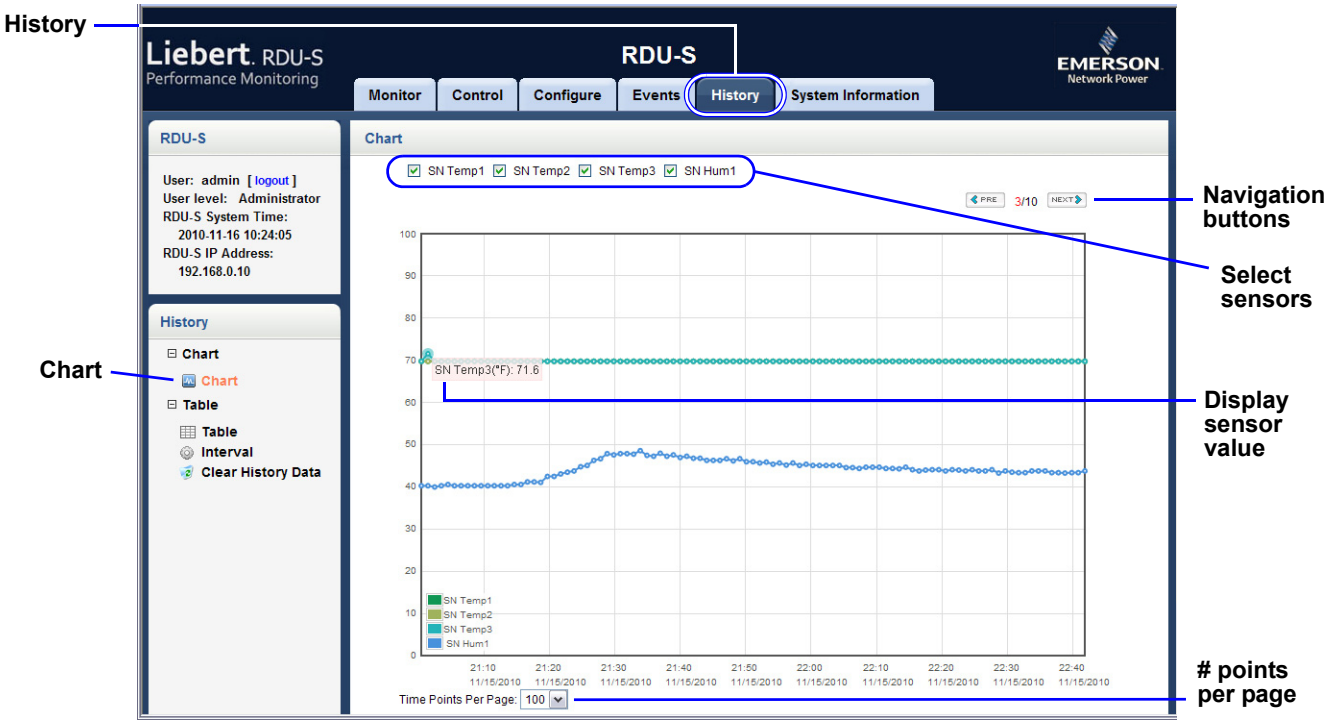
Function	For details, see:
View a line graph of historical data	**10.1 - Chart**
View historical data in table format and export data	**10.2 - Table View of Historical Data**
Specify interval for collecting data	**10.3 - Interval**
Delete all historical data records from the Liebert® RDU-S™	**10.4 - Clear History Data**



10.1 Chart

The Chart view shows historical data on a line graph:

- Click on the **History** tab at the top of the window.
- In the left pane, click **Chart**.
- The graph at right shows the most recent data.
  - Use the navigation buttons to move to the previous or next page of data.
  - Select sensors to include in the graph by clicking the sensor check boxes above the graph.
- Hold the mouse over any point to show the sensor name and value associated with that point.
- Specify the number of points to display on a page from the Time Points Per Page drop-down list below the graph. Click on the arrow and choose 20, 50 and 100 from the list.



10.2 Table View of Historical Data

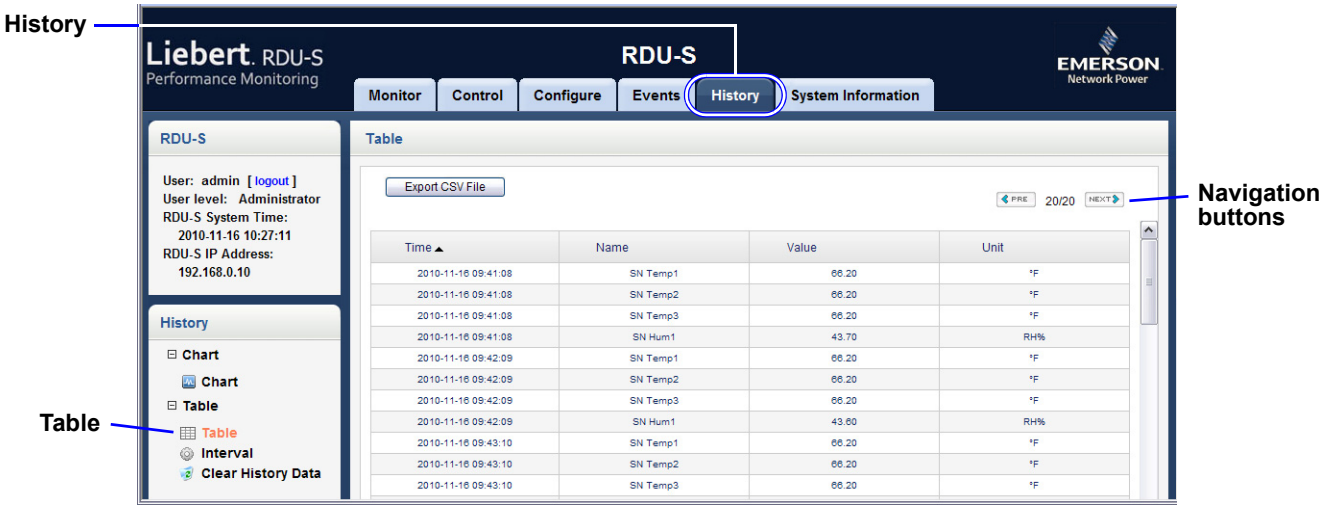
The Table view shows all historical data points in list form, including when and where each event occurred and the value that triggered the event.

- Click on the **History** tab at the top of the window.
- In the left pane, click **Table**.
- View or export the data as follows.

10.2.1 Viewing Records

The right pane displays historical data points for all connected sensors. The table view includes all data points even if some sensors are excluded from the Chart view.

- Click on any column heading—Time, Name, Value or Unit—to sort the list by that column.
- Use the navigation buttons to move to the next or previous page of data.

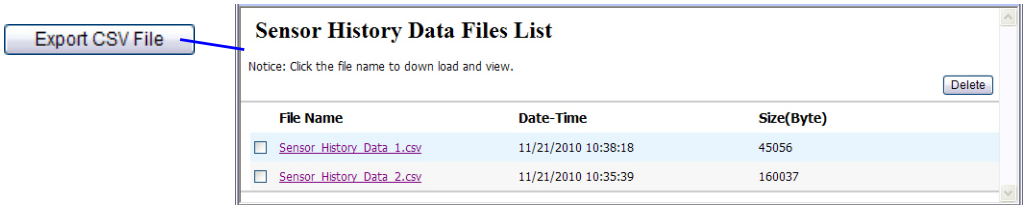


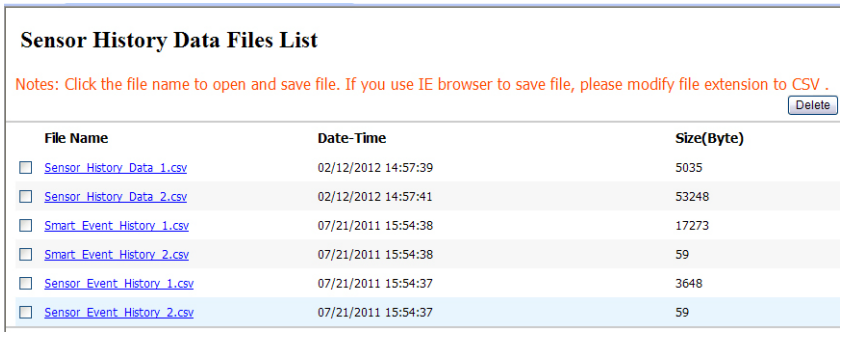
10.2.2 Exporting Historical Data Records

Historical data may be exported to a CSV file—a comma-delimited file that may be opened with a spreadsheet application such as Microsoft Excel. (To delete data, see **10.4 - Clear History Data**.)

- Click **Export CSV File** to generate a file.

  A new window displays a list of all files exported from the Events and History tabs. Historical data files are named *Sensor_History_Data_#* (where # is a number) with the extension *.csv*. The file names are listed as hypertext links, along with the time created and file size, as shown below.
- In this window, you may:
  - View a file - click on a link to preview the file (close preview window to return to list).
  - Remove a file - check one or more boxes at left, then click the **Delete** button.
  - Save a file - right-click on the file name and select an option.



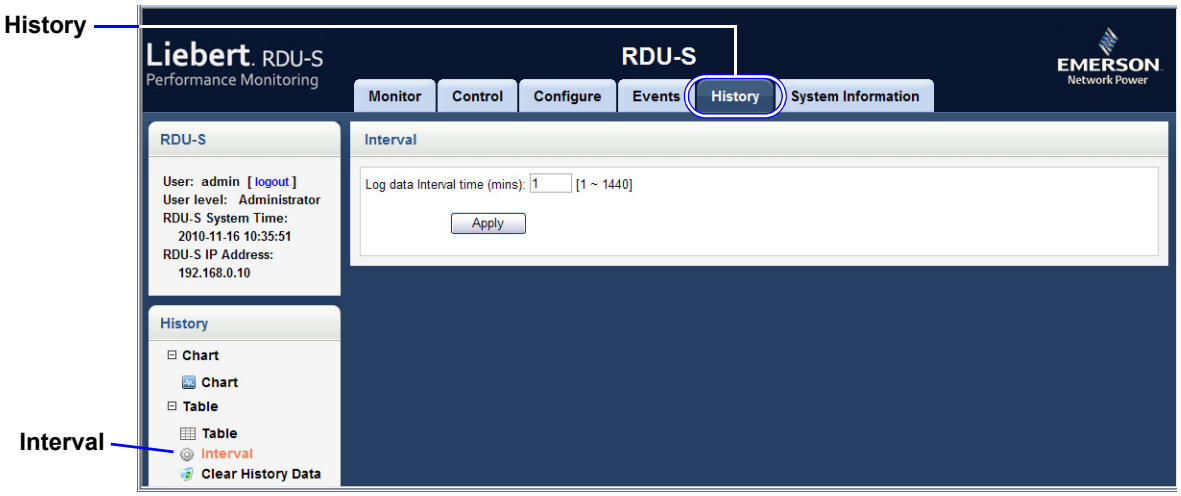

Sensor History Data Files List
Notes: Click the file name to open and save file. If you use IE browser to save file, please modify file extension to CSV .
Delete
File Name
Date-Time
Size(Byte)
Sensor_History_Data_1.csv 02/12/2012 14:57:39 5035
Sensor_History_Data_2.csv 02/12/2012 14:57:41 53248
Smart_Event_History_1.csv 07/21/2011 15:54:38 17273
Smart_Event_History_2.csv 07/21/2011 15:54:38 59
Sensor_Event_History_1.csv 07/21/2011 15:54:37 3648
Sensor_Event_History_2.csv 07/21/2011 15:54:37 59

10.3 Interval

The Interval feature defines how frequently sensor readings will be collected. The specified amount of time is the number of minutes that will elapse from one sensor reading to the next.

To do this:

- Click on the **History** tab at the top of the window.
- In the left pane, click **Interval**.
- Enter the number of minutes in the **Log Data Interval Time (mins)** box. Valid entries range from 1 to 1440.
- Click the **Apply** button (or navigate to another window to cancel without saving the change).

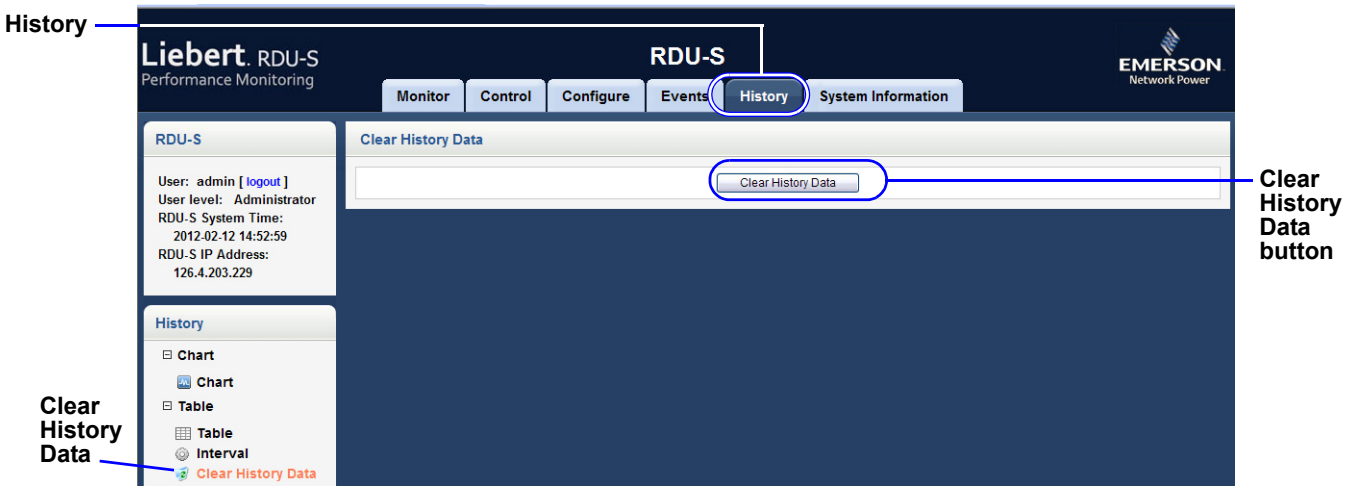


10.4 Clear History Data

The Clear History Data feature will permanently delete all historical data from the Liebert® RDU-S™. Before doing this, be sure to export the data to a file if you wish to save it (see **10.2.2 - Exporting Historical Data Records**). Set up a regular schedule to export, then delete data to keep a log of sensor readings over time.

To delete all data:

- Click on the **History** tab at the top of the window.
- In the left pane, click **Clear History Data**.
- When ready, click the **Clear History Data** button in the right pane.
- A confirmation window opens. Click **OK** to proceed (or click **Cancel** to close the editing window without deleting all data).

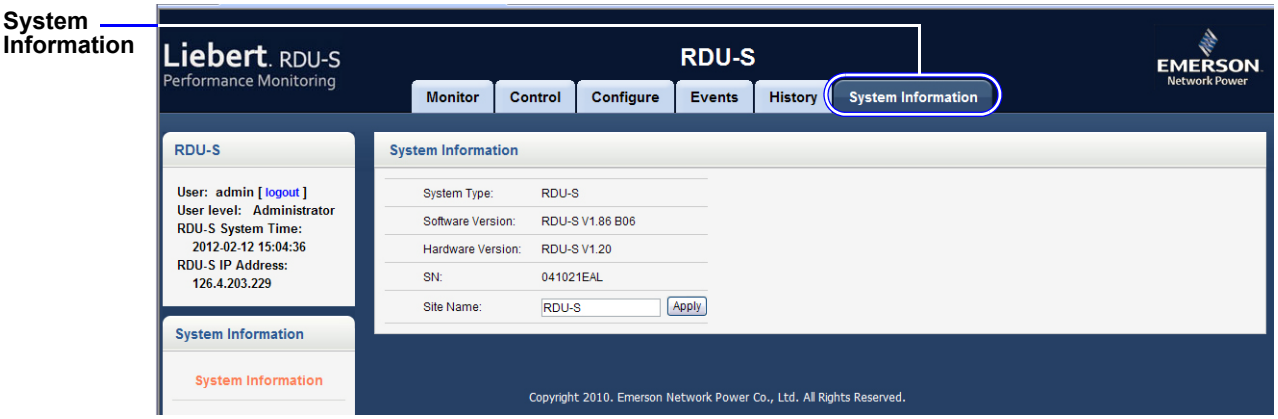


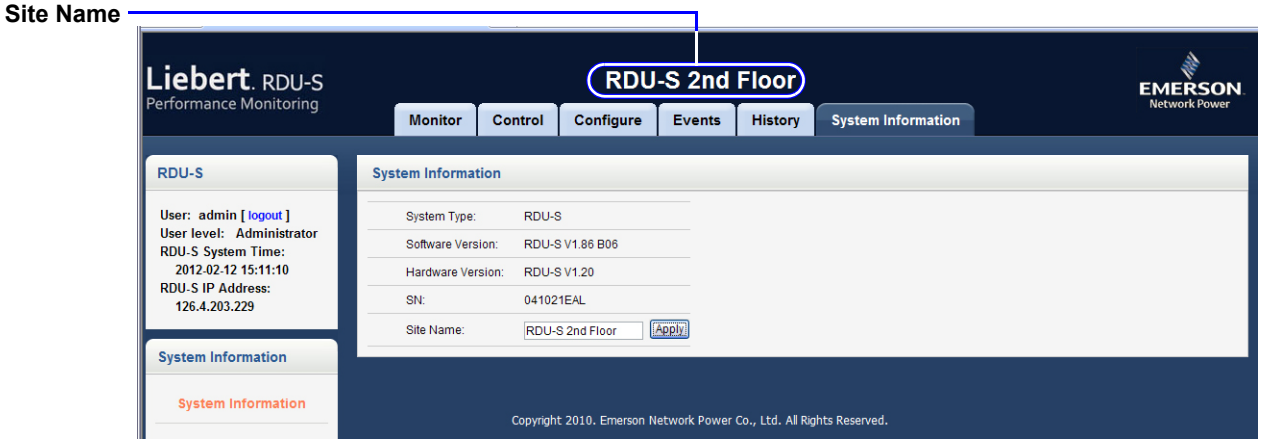
11.0 System Information Tab

The System Information tab displays details about the Liebert® RDU-S™, including software and hardware versions and serial number.

To view system information:

- Click on the **System Information** tab at the top of the window. The unit details appear in the right pane.
- To change the unit name, which appears at the top of every page in the Web interface:
  - Enter a new name in the Site Name text box.
  - Click the **Apply** button. The new name will appear above the tabs at the top of the window, as shown below.





Ensuring The High Availability Of Mission-Critical Data And Applications.

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SL-31310_REV0_04-12

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